Tools and Guidelines for Implementing New Payment Mechanisms for Ambulatory Care in the Ministry of Health Provider System of Peru

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Abstract

This report is the second and final technical deliverable under the Ambulatory Payment Innovation, a pilot project that seeks to identify and promote innovative strategies and mechanisms of ambulatory care financing in the public health care sector of Peru. In the vein of the conceptual framework, presented in Report 1, *Design Options and Data Needs for the Ambulatory Payment Innovation in the Public Health Care Sector of Peru* (Telyukov et al., 2002), this material provides the Ministry of Health with methodological guidelines and numerical tools to put the new mechanisms of provider financing in operation. The aforementioned tools include as follows:

- A relative value scale for ambulatory procedures by CPT99 code;
- An algorithm for compiling packages and subpackages of ambulatory services out of CPT99 procedures;
- A cross-walk from the Schoolchildren's Health Insurance Program to CPT 99 classification of procedures in order to collate clinical reporting with financial data requirements;
- An experimental rate schedule for the financing of ambulatory care providers by service package.

The Villa El Salvador health care network in the Regional Health Directorate of East Lima and the Cono Sur health care network in the Regional Health Directorate of Tacna served as the empirical base to design and validate the aforementioned tools.

With the ambulatory procedure classifications, service packages, and experimental rate schedules in hand, the Ministry of Health is well equipped for pilot-testing the mix of prospective capitation and retrospective reimbursement. The combination of these generic provider payment strategies should be flexibly adjusted to diverse socioeconomic, supply, and demand conditions in different regions and health care networks of Peru.

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Acronyms

API	Ambulatory Payment Innovation.
ARSE	Insurer of Free Student Insurance
CIE10	International Classification of Diseases, 10th Revision.
CLAS	Comunidades Locales de Administración de Salud (Local Health Administration Community)
CPT	Current Procedural Terminology
DISA	Dirección [Regional] de Salud ([Regional] Health Administration)
ESSALUD	Seguridad Social en Salud (Social Security in Health)
HAE	Automated Epicrisis Sheet
HIS	Health Information System
HRG	Healthcare Resource Group
MINSA	Ministerio de Salud (Ministry of Health)
OPCS4	Office of Population Censuses and Surveys. Codes, Fourth Revision
PAAG	Programa para la Administración de Acuerdos de Gestión (Management Agreements Administration Program)
PSL	Programa de Salud Local (Local Health Program)
PSNB	Proyecto de Salud y Nutición Básico (Health and Basic Nutrition Project)
P2000	Project 2000
SEG	Seguro Escolar Gratuito (Free Student Insurance)
SICI	Sistema de Costos e Ingresos (Costs and Income Information System)
SIS	Seguro Integral de Salud (Comprehensive Health Insurance)
SMI	Seguro Materno Infantil (Mother and Child Insurance)
SPP	Sistema de Programación y Presupuestos (Programming and Budget System)
USAID	United States Agency for International Development
USIS	Unidad del Seguro Integral de Salud (Comprehensive Health Insurance Unit)

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Executive Summary

This report is the second technical product of the Ambulatory Payment Innovation (API), an initiative that seeks to identify and promote innovative strategies and mechanisms for financing ambulatory health care in the Peruvian public sector. The content of this report is consistent with the conceptual framework presented in Report 1, *Design Options and Data Needs for the Ambulatory Payment Innovation in the Public Health Care Sector of Peru* (Telyukov et al., 2002). Its purpose is to provide the Peruvian Ministry of Health (*Ministerio de Salud*, MINSA) with the tools and methodological guidelines for operating new payment mechanisms for the ambulatory sector, including the spectrum of activities offered under the Comprehensive Health Insurance (*Seguro Integral de Salud*, SIS) Benefits Plan as well as the local health program of the local health administration communities (*communidades locales de administración de salud*, CLAS).

For this purpose, criteria were defined to guide the selection of the facilities from which information would be gathered. The first criterion was the existence of a cost information system, through either a cost and income information system (*Sistema de Costos e Ingresos*, SICI) or a programming and budget system (*Sistema de Programación y Presupuestos*, SPP). The second criterion was the existence of an information system on the production of ambulatory services that was reliable, in terms of the accuracy of its records. The final criterion was the willingness of local authorities to collaborate with the API. Based on these criteria, and bearing in mind the limited timeframe for this design phase, two micronetworks were selected as information providers: the Villa El Salvador micronetwork of the Lima Este Health Directorate, and the Cono Sur micronetwork of the Tacna Health Directorate.

In terms of methodology, the work consisted of two activities. First was the creation of a standardized database of activities and/or procedures that could be costed. The second was an estimation of the costs to produce ambulatory activities and/or procedures. For the first activity, the production of activities and/or procedures was reclassified according to the MINSA standard, i.e., the CPT99. For the second activity, it was considered pertinent that the procedures included in the CPT99 can have production costs based on the estimates done by the SICI and SPP and the cost weightings presented in the MINSA catalogue of health services. It was anticipated that the integration of both sets of information would be sufficient to identify an organized profile of groups of activities (packages) that could be costed. The existence of production costs for each treatment, the number of contacts/treatments per patient, as well as the population assigned to the health facility would facilitate the estimation of the costs to provide each package by treatment, person served and per capita. These estimates would in turn facilitate the preparation of a capitated budget as well as the reimbursement and copayment amounts that would be used as part of the strategy for integrating various payment mechanisms in the ambulatory sector.

To carry out the first task, lists were compiled of the activities/clinical procedures under Free Student Insurance (*Seguro Escolar Gratuito*, SEG) and Mother and Child Insurance (*Seguro Materno Infantil*, SMI). On the basis of these documents, equivalences were established with the CPT99 list of procedures. This information was used to reclassify the services production of the selected facilities according to the CPT99 standard. The period of observation was 45 days for the Villa El Salvador micronetwork and the entire year for the Cono Sur micronetwork.

To carry out the second task, information was used on observed costs at eight hospitals where the SICI has been implemented. The information processed was that available up to March 2002. Also used was information on budgetary costs from 34 regional health directorates (*direcciones regionales de salud*, DISAs) in which the SPP has been implemented. The information processed was that available for the year 2001. Based on the SPP cost reports, it was possible to differentiate costs to produce specific activities/procedures for both hospital facilities and primary care level facilities. The existence of costs estimates for CPT99 hospital ambulatory procedures common to the SICI and the SPP made it possible to have observed costs in the primary care level facilities, based on an extrapolation of the data. One difficulty encountered in this task was that public health activities were not considered within the bundle of activities analyzed by the SICI and SPP. This made it necessary to perform a normative cost exercise for such activities.

As a result of integrating the two preceding tasks, it was possible to identify the entire range of activities provided in ambulatory care at the primary level. These activities were later subjected to a grouping process that produced three broad categories: preventive/promotional packages or interventions; recuperative packages or interventions; and public health packages or interventions. The costing of separate activities made possible the costing of 10 packages. Four packages are preventive/promotional, four are recuperative, and two are public health. The greatest concentration of resources was seen in the package called *unprioritized recuperative care*, which accounted for 74.12 percent of the budget of the Cono Sur micronetwork. The term *unprioritized* covers medical visits and other care for which there is no detailed information on the type of pathologies treated. This package was in turn segregated into 13 subpackages, which were generated on the basis of the processing of these data by the Healthcare Resources Group (HRG) grouper. Although the number of ambulatory HRG subpackages was higher, only 13 are used in this report, for illustrative purposes.

Preparation of the general budget for the micronetwork considered the capitated modality for 100 percent of recuperative care and for 80 percent of preventive/promotional care and public health. Consideration was given to implementing retrospective reimbursement systems for preventive/promotional and public health activities to finance the remaining 20 percent of activities, allowing for additional financing for the micronetworks on the order of 4.9 percent. This amount represents an incentive to improve the performance of preventive and health promotion activities. Finally, a scheme of copayments was prepared for recuperative treatments, where the demand from the non-poor population may exceed the initial estimates.

In preparing this document various tools have been developed that will help to clarify the steps required to operate payment mechanisms in the ambulatory care setting of Peru's public sector. These are:

- Scale of CPT99 costs for medical procedures that can form part of ambulatory care packages
- Algorithm for generating ambulatory care packages and subpackages
- Interface of SEG-CPT99 procedures to make possible a rapid evolution in the use of the medical records system for budgetary applications
- Budgetary table for financing the ambulatory sector according to care packages and payment mechanisms

Conclusions

Both prospective capitation and retrospective reimbursement have strengths and weaknesses so that neither of these options can by itself be considered the best alternative, disregarding other payment options. It is more likely that there will be a combination of different payment modalities in different local circumstances:

- Retrospective reimbursement could be desirable in areas where a lack of basic care, due to limited service production capacity or adverse geographic and/or socioeconomic conditions that limit demand, produce undesirable health consequences. Under these circumstances, the incentive associated with this payment mechanism – i.e., to increase production – may be considered key as a health policy objective.

- In urban areas, where the policy objective is to improve not only equity but also efficiency, it may be advisable for the service provider to share the financial risk. In this way, the provider would have an incentive to make more rational and efficient use of its resources. In the long term, and as a cost containment strategy, the provider would have to give priority to preventive/promotional care, channeling user preferences so that the user will make greater use of services of this type.

Choosing how to combine these payments mechanisms must be guided by the evidence gathered, which will surely be influenced by socioeconomic conditions as well as supply and demand conditions. As suggested in the API Report 1 (Telyukov et al., 2002), the selection of a payment methodology is guided by the desired outcomes of care. Therefore, desired quality considerations should also be a factor in the solution and implementation of payment methods. The micronetworks may become the natural place for carrying out experimental activities. The definition of micronetworks will have to respect the current operational configurations and definitions in effect in Peru. The presence of the CLAS in the pilot areas provides significant added value, although in itself it is not a critical element in the selection process.

A pre-feasibility analysis of the pilot will reduce uncertainty regarding the requirements for carrying out the experiment. An exploratory exercise could take about three months. A group of experts, with the participation of the SIS administration, could travel to different regions in Peru to examine the local supply and demand of services, the managerial capacity of local providers, epidemiological priorities, as well as the socioeconomic and geographic profiles of the areas of study. As part of its activities, this team could lead focus groups with members of the community, conduct semi-structured interviews with managers and health personnel, review and analyze local and/or regional statistics, and analyze surveys directed to users and providers. The results of these activities could help to validate the basic premises on which the idea of the experiment rests. As a direct result, the SIS unit could make well-founded decisions regarding the pilot experiment

Introduction

The Peruvian Ministry of Health (*Ministerio de Salud*, MINSA) is seeking to make health services more accessible to the country's uninsured populations, particularly to the poorest among them, and with emphasis on mother and child services. To do this, it is promoting equity in the distribution of the resources available from the public subsector in health.

As part of its strategy to improve equity, Free Student Insurance (*Seguro Escolar Gratuito*, SEG) was established in 1997,[1] followed by Mother and Child Insurance (*Seguro Materno Infantil*, SMI) in 1998. In 2002, both of these insurance plans were integrated into the Comprehensive Health Insurance[2] (*Sistema Integral de Salud*, SIS) program, thus providing health benefits to newborns, children, and adolescents under the age of 18, and to pregnant and post-partum women. Later in the same year, emergency care benefits for the entire population were added.[3] The SIS covers the costs incurred for additional examinations and medications needed during service delivery. The SIS financing does not, however, allow cover the hiring of additional personnel to provide these services.[4]

Since 1999, different mechanisms have been explored for paying health services providers, particularly hospital providers, through the design of price lists for Healthcare Resource Groups (HRG), by the Partnerships for Health Reform (Telyukov, 1999a and 1999b) and Project 2000 (Telyukov and Sobrevilla, 1999), both projects under the auspices of the U.S. Agency for International Development (USAID).

During the design phase for the hospital services payment mechanism, it became clear that a complementary payment mechanism for ambulatory services needed to be designed as well. This would allow the implementation of overall financing for all types of hospital care, i.e., ambulatory as well as inpatient. This complementarity of hospital financing for each sector of production would prevent fragmentation in the provision of care, which could happen if the financing mechanism in one sector (inpatient) sought greater institutional efficiency while the financial mechanism in the other sector (ambulatory) remained neutral or negative in terms of efficiency. Such fragmentation could have undesirable effects on the clinical management of the patient.

In addition, it was necessary that the new payment design initially focus on ambulatory services provided in the less complex facilities that make up the health services networks/micronetworks (health posts, heath centers, and support hospitals). Success implementing the design in smaller pilot sites will allow it to be rolled out to various areas of the country selected by the SIS.

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[1] Although free comprehensive insurance was created in August 1997, it was not until 1999 that the agency charged with adminstering it, ARSE, was formally created through RM 076-99-SA-DM, on February 17, 1999.

[2] The Comprehensive Health Insurance Unit was created by RS 445-2001-SA on October 31, 2001. This unit reports to the Vice Ministry of Health and is attached in budgetary and operational terms to the Program to Support Reform of the Health Sector (PARSALUD).

[3] Law 27604 amends General Health Law No 26842 to make emergency and childbirth care compulsory. The SIS is responsible for financing these services.

[4] A basic assumption of SEG, which was retained when starting up the SIS, is that the human resources of MINSA are under-utilized. For this reason, it is not advisable to over-finance health services, as this would aggravate the pre-existing system of inefficiency.

To these ends, the Ambulatory Payment Innovation (API) was initiated. The API is intended to help develop SIS capacities, as the SIS will be responsible for directing state financing for equitable and sustainable health care in Peru.

The API initiative also will make it possible to strengthen prenatal, childbirth, and post-partum services for women, care for newborns, pediatric care for children and adolescents, as well as emergency care for adults. Improvement in these essential services, as well as the large proportion of the population at which they are targeted, should produce positive effects on national health status.

To complement the effort in hospitals and health centers, there are plans to explore the possibility of extending the API to decentralized services management agencies such as the civil associations called local health administration communities (*comunidades locales de administración de salud*, CLAS).[5] CLAS currently manage 24 percent of MINSA's health services at the primary care level. Based on their abilities, the CLAS receive state financing to deliver health services directly related to the SIS as well as certain services not otherwise in CLAS' purview.[6] Given the explicit political support that has been given to this model of service management, it is hoped that the percentage of facilities administered by CLAS will gradually increase.

The convergence of hospital and ambulatory payment modalities within the services networks will strengthen the vertical functional integration of services, from a lower to a higher level of complexity and vice versa. It will also contribute to strengthening operational coordination between the CLAS and the primary care facilities they administer, in that both recuperative care and preventive/promotional care, the latter of which optimizes the development of primary health care, are enhanced.

The payment design discussed here responds to a MINSA initiative and has as its technical counterparts the General Individual Health Directorate and Comprehensive Health Insurance Administration, or Unit (*Unidad del Seguro Integral de Salud*, USIS). Its implementation has been entrusted to the Partners for Health Reform*plus* (PHR*plus*) program, the successor to PHR, also implemented by Abt Associates Inc. and partners and financed by USAID, in coordination with MINSA's Project 2000.[7]

The findings in this report reflect the operational design of the payment mechanisms proposed in the first report (Telyukov et al. 2002), geared to the organizational and economic environment of the Peruvian health networks and/or micronetworks. While the first report proposes the methodological framework for financing ambulatory care, with its respective options for vertical integration, this report adds a practical component, i.e., it provides an initial look at how to combine per capita, procedure, and copayment payment mechanisms in the context of SIS financing and decentralized contracting guided by the CLAS. The report marks the culmination of the design phase of the API. The follow-up guidelines it proposes allow the initiative to advance to the pilot implementation stage.

[5] The CLAS were originally called local health administration committees. To avoid legal confusion regarding the obligations of a Committee, as of 1999 the decision was made to adopt the new name of local health administration communities.
[6] The CLAS sign a management contract with MINSA to carry out an entire spectrum of activities at the primary level, for both individual and public health. To do this, they are required to provide services to the adult population not currently covered by the SIS. They are also responsible for carrying out public health actions not included within the SIS benefits plan.
[7] Alexander Telyukov, PHR*plus*, coordinates the activity with technical assistance from Drs. Miguel Garavito (PHR*plus*), Luz Loo, and Alfredo Sobrevilla (Project 2000).

1. Purpose

The technical agenda of the API involves identifying new financing strategies for ambulatory health services. Analysis of the existing financial strategies leads to the recommendation that the best way to finance ambulatory services is not with a single mechanism but rather with a combination of 1) prospective capitation, 2) reimbursement for services and 3) copayments. The latter two financing options have been in effect in Peru and their design and operation are familiar to health service providers and funders. The prospective capitation mechanism, on the other hand, comprises less familiar elements, such as the construction of estimates of production volumes, costs for service packages offered, and beneficiary population.

Given that the potential users of the new payment mechanisms are the SIS and the CLAS, it is essential to identify the service packages each program provides. The identification of these packages thus becomes a fundamental step for moving ahead with the technical process of designing capitated budgets by networks/micronetworks. The costing done for each of the procedures offered may later contribute to the general costing of service packages. It is thus important that the basic information used to order the production of services be clear and unambiguous.

Similarly, the information on costs must be available with the same level of detail as the production of services information. A cost system with reports that are not consistent with the service production structure of health facilities will only divide the information into administrative/accounting information and clinical information, i.e., it will not facilitate the implementation of financial tools that seek to tie clinical, epidemiological, and demographic elements with economic elements. Accordingly, another objective of this report is to analyze the cost information available, verifying opportunities for improving existing costing systems, duly implemented and validated by MINSA.

The aim of this report is primarily to make the financial elements of innovation clearer, although some recommendations will be outlined for organizing ambulatory services in view of the new institutional management arrangements. However, a detailed discussion of these recommendations is beyond the scope of the current assignment, which is limited to the design of ambulatory payment mechanisms and integrated care and does not dwell on institutional questions involved in the application of the proposed mechanisms.

In summary, therefore, this document seeks to provide MINSA with the methodological tools and guidelines for applying the new payment mechanisms proposed in the first report (Telyukov et al. 2002) to ambulatory health benefits under the SIS Benefits Plan and to the benefits provided in the services and facilities of the CLAS-administered health networks.

It is thus considered necessary to:

- Identify the current ambulatory benefits of the SIS Benefits Plan and standardize them according to the current procedural terminology (CPT-99);
- Perform direct and indirect costing of the ambulatory benefits of the SIS Benefits Plan; and

- Take steps toward developing a scale of relative values for each procedure and selecting groups of procedures by type of benefit provider, in order to estimate the annualized per capita costs of each group.

2. Organizational Aspects of the Study: Selection of Pilots

To tie this design process to concrete reality in Peru, a working strategy was developed that involved both in-house work and the gathering of basic information from health centers and posts.

One of the difficulties encountered was the identification of primary care facilities capable of providing the information needed to design the new payment mechanisms. To overcome this problem, the PHR*plus*/Project 2000 team first developed organizational selection criteria and applied them to the available facilities in order to pre-select candidate facilities.

The first criterion was that a solid cost information system containing recent information had been implemented in the facility. In this respect, preference was given to those facilities whose costing approaches were similar to that of the Costs and Income Information System (*Sistema de Costos e Ingresos*, SICI) of Project 2000. Knowing that the Health and Basic Nutrition Project carried out the implementation of a SICI-Network, the universe of candidate facilities was defined as those with operational experience with this tool. Capturing cost information about ambulatory care delivered in hospitals presented no difficulty, given that the SICI is being applied in 10 MINSA hospitals, each of which has different characteristics in terms of infrastructure, human resources, etc.

The team also investigated whether an operational budgetary costs system was functioning in the facilities. This measure was taken to provide for the eventuality that the ambulatory services costing system would not be operational, and thus able to provide cost data, at the time that information from the field was collected. Given that the Programming and Budget System (*Sistema de Programación y Presupuestos*, SPP) gathers information from facilities at all levels of complexity in a regional health directorate (*direcciónes regionales de salud*, DISAs), it was possible to compare the cost estimates done by the SICI[8] and the SPP.[9] Based on this cost comparison for a single facility, it was possible to estimate a budgetary costs correction factor, which would make it possible to obtain an approximation closer to the costs observed at the primary level.

The second requirement was that sufficient information be available on the production of health services. Although this requirement would seem obvious, in reality it is difficult to satisfy, given the current level of MINSA's institutional development. Medical records in MINSA facilities has traditionally focused on the reason for a medical visit, and more frequent recording of the ambulatory clinical procedures performed has begun only recently, with the introduction of Free Student Insurance. Although the SEG-Central Level has a list of medical/surgical and diagnostic support services that that can potentially be carried out in ambulatory facilities, it was required that a candidate facility actually have used that tool.

[8] It should be understood that the cost estimates provided by the SICI are limited to the 10 hospitals and eight DISAs in which this system is in operation.
[9] The SPP is operational in the country's 34 DISAs, as well as in 100 executing units.

The third and final requirement was that local MINSA authorities be willing to collaborate in the design of the API. Although the central level showed solid interest in moving ahead with the design of the new payment mechanism, it was considered equally advisable to share with local authorities the importance that their collaboration in the financial management innovation had to the MINSA system.

With the application of these criteria, the original list of candidate networks for participation in this experiment was gradually refined until a micronetwork for providing production data was identified: this was the Villa El Salvador Micronetwork located in Lima Sur. Some of the design and implementation elements outlined in this document are based on observations from this micronetwork. The following information on the production of services delivered to patients was sought from this micronetwork's databases:

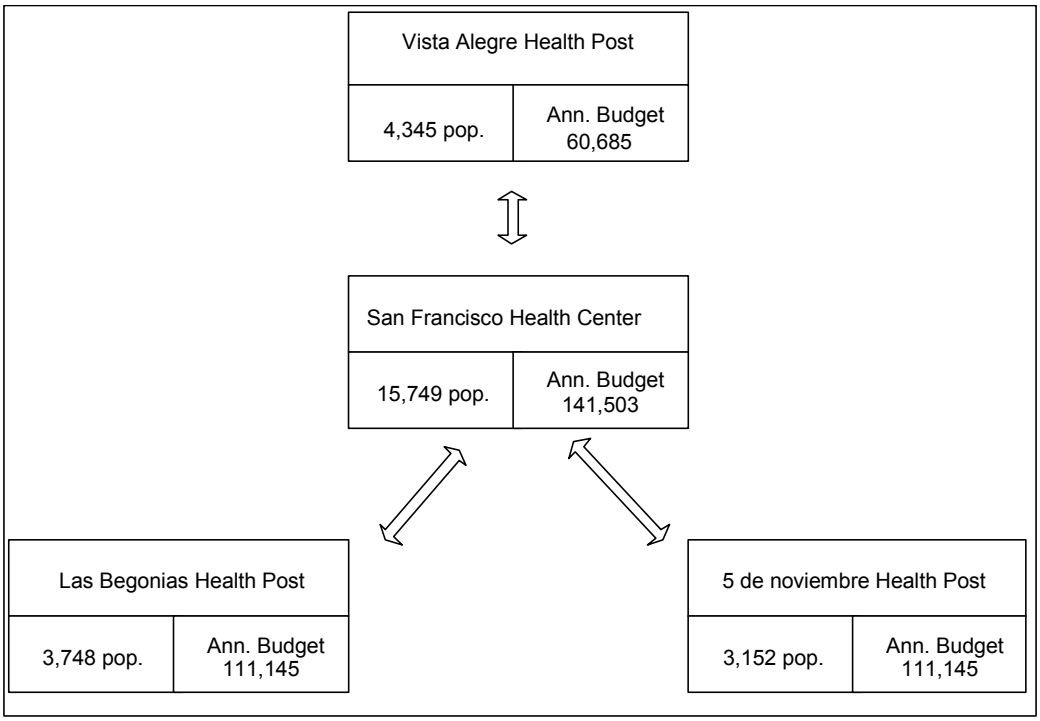
- Clinical history
- Age
- Sex
- Principal treatment diagnosis
- Secondary diagnoses
- Additional examinations performed
- Medical treatment provided

This initial selection was supplemented with a second micronetwork, administered by a CLAS. This was done to meet the need for an additional observation point, for treatments provided at the primary level and currently not considered within the scope of the SIS, although in practice they are the subject of a negotiation and contracting process. These services cover both individual and public health care. A network was selected in a region where the presence of CLAS was predominant: the Cono Sur micronetwork in the Tacna DISA. The following information on service production was sought from this micronetwork:

- Individual health goals contracted and carried out
- Public health goals contracted and carried out
- Executed budget
- Population assigned

Figure 1 shows selected characteristics of the Cono Sur de Tacna micronetwork. More detail on the type of information used for managing a CLAS facility is in Annex A, which describes the services contracted to be carried out by a model local health program in the year 2000. One of the reasons for selecting Tacna was the predominance of the CLAS management model in this DISA since 1996. CLAS officials judged that a five-year period of operations ensures that the facilities offer reliable information. During the first two years, the programming and execution of activities may vary substantially due to uneven local planning capacities, a factor that by the third year tends to disappear as experience grows.

Figure 1: Basic Characteristics of the Cono Sur Micronetwork in Tacna



To access the CLAS information, contact was made with the Management Agreements Administration Program (*Programa para la Administración de Acuerdos de Gestión*, PAAG), an agency that considered the preparation of this report an opportunity to improve and modernize the financial management conditions currently being applied to the CLAS. It is also worth noting that the PAAG has been making an effort to critically analyze the achievements of the CLAS, in order to strengthen this management modality and possibly extend its range of action to local hospitals.

3. Activities and Technical Results

3.1 Adjusting Service Classification to the Updated Procedural Terminology

A key element in implementing the new payment mechanism for ambulatory health services is having information on ambulatory services production at the primary care level, whether individually or in services networks. The more detailed the information on services, the more possible it is to precisely identify costs for each service provided by MINSA. The importance of having this information was already evident when identifying the costs for the production of hospital services. It allowed the costs of hospitalization – which were initially estimated by day of hospitalization – to be assigned to Healthcare Resource Groups.

Similarly, the analysis of the ambulatory services offered by MINSA requires the use of a procedures classification system that is exhaustive, unambiguous, and detailed enough to define production costs. The level of detail regarding the procedures described is extremely relevant to the extent that these procedures become the basic pieces that will make it possible to assemble specific services packages with a specific clinical consistency as well as consistency in the use of resources.

Although there are many lists of procedures classifications, for both ambulatory and inpatient care, MINSA has had the opportunity to use the following:

1. List of MINSA procedures
2. Catalogue of MINSA health services
3. SEG List of Procedures
4. Current Procedural Terminology (prepared by the American College of Physicians, year 1999)
5. British List of Procedures (prepared by the National Office of Censuses and Surveys of the United Kingdom)

The list of MINSA procedures was prepared and disseminated by the Office of Statistics and Informatics for its hospital discharge system. It contains a total of 4,544 procedures, of which 64 are radiology procedures, 19 are radiotherapy procedures, 12 are physical medicine and rehabilitation; the remaining 4,449 are inpatient medical and surgical procedures. It has had limited statistical application in the Health Directorates of Lima Sur and Ica, involving five hospitals during the years 1996 to 2000.

The catalogue of MINSA health services was prepared by the Program to Strengthen MINSA Health Services, and it has a total of 1,662 procedures and services. Although it contains fewer total procedures than the list, it includes 305 laboratory procedures, 741 surgical procedures, 478 clinical

procedures, 127 radiology procedures, and 11 services. Its area of operations has been two hospitals located in two health directorates of Lima, during the years 1998 to 2000.

The list of procedures under Free Student Insurance was prepared by ARSE, the Insurer of Free Student Insurance, and has a total of 1,659 procedures. Of these, 595 are laboratory procedures, 525 are surgical procedures, 160 are clinical procedures, 165 are radiology procedures, 95 are odontostomatology procedures, 49 are anesthesiology procedures, and 70 are pathological anatomy procedures. It has had national application in primary, secondary, and tertiary level facilities, although only in the pediatrics services.

The current procedural terminology (CPT99) is the first use by MINSA of a standardized list of procedures prepared outside the country. Its preparation and periodic revision are carried out by the American College of Physicians and it contains 7,614 procedures. Of these, 246 are anesthesiology procedures, 4,913 are surgical procedures, 636 are diagnostic and therapeutic radiology procedures, 1,113 are laboratory and pathological anatomy procedures, 719 are clinical procedures, and 128 are health services. The CPT99 has been used for inpatient procedures in eight Pilot 2000 pilot hospitals since 2000.

The British list of procedures (OPCS4) is the second list of procedures with a foreign origin. It is used indirectly by MINSA's Hospital Discharge System, i.e., not explicitly for the local user. Its preparation and periodic review are carried out by the National Office of Censuses and Surveys of the United Kingdom. It contains 4,874 medical and surgical procedures. It is being used in eight Project 2000 pilot hospitals in order to allow for the generation of HRGs.

From among the aforementioned lists, the CPT99 has been selected as the standard for measuring the volume of MINSA production for both ambulatory and in-hospital care. This list will also be used to estimate production costs in MINSA. The exhaustive nature of the list, the guarantee of continuous updating by the agency that created it, positive experience with using it in the Project 2000 pilots, and the observed tendency for this list to also become the standard for recording procedures under Social Security in Health (*Seguridad Social en Salud*, ESSALUD) have all been factors that contributed to its selection.

3.2 Design of the List of Services

3.2.1 Objective

An extremely important element for successful design of the price list by procedure and services packages was having a database of ambulatory services production based on the CPT99 standard. To create such a database requires that the CPT99 standard be introduced to the pilot facilities for use in their clinical reports. Based on Project 2000's experience with implementing a new reporting system, a preparation phase of about three months is needed prior to using the new system. During this preparation period, training is provided both to those in charge of processing the records and staff responsible for manually recording the procedures. Once this phase is completed, it takes about two months for the staff to become familiar with the new recording standard.

However, even this preparation does not guarantee that the handling of the new recording standard will be entirely reliable. The under-recording of procedures is virtually inevitable, and it is also impossible to prevent the quality of recording from being less than optimal. Therefore, to minimize negative financial effects that result from incomplete or inaccurate information, a process

for continuous quality improvement in recording information must be implemented. This is done by training and monitoring the performance of the statistical units that themselves are responsible for monitoring and providing feedback to health services providers. It has been noted that after the initial implementation of the CPT99, 40 percent of the information is not recorded. This level usually falls to 20 percent within three months and 10 percent in the next six months. The rate of quality improvement is still slower; more than nine months after the new standard is implemented, no more than 40 percent of medical records can be considered to be of acceptable quality.

Based on this experience, it was clear that obtaining ambulatory services production data based on the CPT99 standard would take no less than nine months. For design purposes, it was sufficient to have existing reliable information; it was not necessary for the new CPT99 recording system to have been implemented. Thus, it was considered appropriate to use the services production information that the USIS had available, basically, the SEG list of procedures.[10] In order to be able to harmonize the future financial capabilities offered by the CPT99 with the current information system, it was considered necessary to create an interface linking the SEG list to the CPT99.[11] In this way, it is possible to make an orderly transition from old to new standards without losing record reliability. In addition, this facilitates the preparation of preliminary information that can be used to make operations staff aware of how important it is to record procedures properly and of the economic consequences of incorrect recording.

Access to detailed information on the production of services makes it possible to prepare health services packages for the mother and child population and for the school population. Similar to what has been done in the United States regarding DRGs, these packages reflect clinical practices and their consequences in terms of costs. Although MINSA has recently decided to include emergencies in the services financed by the USIS, there is a lack of information on the production characteristics of services of this type. Thus, the procedures interface presented in this report may not include procedures that are routinely performed in emergencies.

3.2.2 Methodology

The latest version of the SEG list of procedures (as of the year 2000) was used in preparing the interface. The USIS took charge of obtaining this list, as well as statistics on national production of procedures. In addition, meetings were held with the USIS to obtain the list of procedures used by the SMI.

Planning the work to be done involved reviewing the organization of both lists to allow comparison with the structure of the CPT list. In addition, the services production statistics would provide procedures justifying at least 80 percent of the volume of national production for both hospitals and the primary care level facilities, i.e., health centers and posts.

For its part, the CPT list would be analyzed using four sequential search levels according to the difficulty of locating the target procedure. This search would be conducted using key words in: 1) the CPT99 alphabetical list, 2) the procedure search option in the software of the Automated Epicrisis

[10] Although Mother and Child Insurance has defined services packages, it does not make use of a standardized list of procedures to do a statistical check of services produced. Nonetheless, the type of services financed by the SMI is included in the SEG list, e.g., diagnostic services, and vaccinations.
[11] SIS procedures are currently recorded on the basis of the SEG list.

Sheet, 3) the CPT procedures taxonomy installed in the HAE software, 4) the CPT99 detailed list of procedures.

The results obtained from the matching process would be classified according to the following categories: 1) exact correspondence, 2) SEG/SMI procedures vaguely described (more than one CPT procedure), 3) procedure not appearing in the CPT99 list.

3.2.3 Results

Access to the SMI list of procedures could not be obtained. Only the list of services packages offered to the insured population was obtained, although no details were provided on the procedures contained in these packages.

In order to make up for the lack of SMI information, an analysis was done of the report on costs of mother and child services prepared by the World Bank's Health and Basic Nutrition Project (PSNB). This document identified services packages as well as the procedures associated with them – 21 procedures associated with 34 mother and child packages. None of these had coding that would identify them explicitly (Table 1). It was also impossible to gain access to the production of these procedures based on these packages.

Table 1: Medical-Surgical Procedures Offered to Beneficiaries of Mother and Child Insurance

Procedure	No.	% of total packages
Hemogram	21	61.8%
Urinalysis	17	50.0%
Blood group	14	41.2%
Glucose	14	41.2%
Echography	9	26.5%
VDRL	6	17.6%
Coagulation profile	5	14.7%
Erythrocyte sedimentation rate	5	14.7%
Hemoglobin	4	11.8%
Total proteins	3	8.8%
Urea	3	8.8%

Procedure	No.	% of total packages
Simple chest x-ray	2	5.9%
Rh	2	5.9%
Fecal analysis	1	2.9%
Simply x-ray of abdomen	1	2.9%
Platelet count	1	2.9%
Hematocrit	1	2.9%
Fecal occult blood test	1	2.9%
Serial stool analysis	1	2.9%
Pap smear	1	2.9%
Bilirubin	1	2.9%

In Table 1, the first column describes the medical-surgical procedure mentioned in the PSNB documentation. The second column identifies the number of packages in which this procedure is present. The third column provides the percentage of packages in which this procedure can be found. For purposes of illustration, it can be said that the procedure most frequently found in these mother and child services packages is the hemogram. It appears in 61.8 percent (21 of 34) mother and child packages identified.

The SEG list of procedures was accessed through the USIS. In addition, access was obtained to the national production of SEG services based on the procedures reported. Initially the interface of procedures was prepared for 278 clinical procedures, representing 95.1 percent of the 1,659 procedures recorded in the SEG database. This set of procedures includes the most representative procedures in the specialties of laboratory, diagnostic imaging, odontostomatology, clinical medicine, surgery, and anesthesiology. To this figure were added 174 procedures in pathological anatomy, which a priori were considered subject to possible under-recording. In total, the interface includes 452

procedures, covering 27.25 percent of the SEG list of procedures. The breakdown of the interface is presented in Annex B.

Table 2 shows the production of services under Free Student Insurance for the year 2000. It should be emphasized that although the laboratory specialty contributes the most procedures to the development of the interface, it is not the specialty that contributes the most procedures to the overall database. That specialty is clinical medicine, and it represents 41.1 percent of all the procedures recorded. It is also striking that odontostomatology procedures represent a significant 22.5 percent of all procedures recorded, not only because it has been a traditionally second-tier sector when estimating production costs but also because the CPT99 list makes no mention of odontostomatology procedures. For this reason, it has not been possible to prepare an interface for these procedures. They will retain their characteristic as a unit of observation until a standard is found that is more suited to the purposes of designing payment mechanisms.

Table 2. Medical-surgical Procedures Offered to Beneficiaries of Free Student Insurance. Grouped by Specialty. Year 2000

Specialty	Volume	No. of procedures	% of production
Laboratory	1,701,212	95	32.7%
Diagnostic Imaging	172,388	34	3.3%
Odontostomatology	1,170,186	66	22.5%
Clinical Medicine	2,136,011	73	41.1%
Surgery	5,339	3	0.1%
Anesthesiology	14,155	7	0.3%
General Total	5,199,291	278	95.1%

A separate note is needed for the specialty of anesthesiology, where the CPT99 list and the SEG list are completely different. While the CPT list classifies types of anesthesia in detail according to the body part or system involved, the SEG list notes only how long an operation lasts and the method used to administer the anesthesia. On a temporary basis, the CPT codes corresponding to intravenous infusion of therapeutic agents and anesthesiology procedures not considered in the list have been assigned to the anesthesiology procedures.

3.3 Allocation of Costs to CPT Procedures that Can Be Produced in the Ambulatory Sector

3.3.1 Methodological and Organizational Approach of Costing

Essential to developing any initiative to improve the productive efficiency of health services is having information on costs. Only with this information can it be conclusively stated whether or not organizational changes have produced institutional gain, as measured in health terms. To the extent that both the strengths and weaknesses of the costing system are known, it will be possible to adequately evaluate the recommendations made based on its estimates. For example, experience with costing hospital services in Peru makes it possible to state the following:

Experience with financial initiatives for health services, such as the initiative begun with School Health Insurance between the years 1998 and 2001, has revealed technical deficiencies that must not be repeated in the health sector. The high transaction costs caused by the inexperience of the MINSA administrative apparatus, as well as the inexperience of the provider apparatus, divert financing from health services themselves to unnecessary administrative tasks. An example is the creation of regulatory, information management, and inspection agencies that practically parallel MINSA. The costs of operating these parallel agencies reduce the benefits going to priority populations.

This part of the report describes the process of estimating costs for ambulatory services. The following information was used:

Information on production of services. This information was used for estimating total reference costs, and for estimating unit costs later used in the subsequent weighting of the costs of services.

1. Production of Free Student Insurance

2. CLAS production. Access was had to CLAS national information, broken down by DISA and CLAS.

3. Interface of Free Student Insurance and CPT99 lists.

4. Interface of lists of activities considered in the Local Health Program of the CLAS and CPT99.

Information on services costs, whether observed or budgetary. This information was used to assign production costs to the CPT99 procedures. It is worth noting that, although the creation of the interface of the SEG and CPT99 procedures gave priority to the highest-volume procedures, the costing was expanded to cover all procedures included in the catalogue of services developed by P2000.[12] To reduce the risk of over- or under-estimation of costs, created when using a single source of information, the cost review base was expanded to include:

1. Information on budgetary costs compiled by the Programming and Budget System (SPP).

2. Information on observed costs in the eight hospitals that have implemented the Costs and Income Information System.

3. Report on observed costs of the PSNB in the Morropón Chulucanas Network

4. Reports on observed costs in the Villa El Salvador and San Juan de Lurigancho Micronetworks.

Information on Relative Cost Weightings. The following documents were used:

1. Catalogue of services prepared by Project 2000

2. Catalogue of MINSA health services

[12] Also prepared using the CPT99 as a reference.

3.3.2 Methodology for Estimating Costs in Ambulatory Services

At the time this report was prepared, there was no services costing system in operation at the primary care level. The costs observed in the primary care level facilities were two years old. In order to obtain more current information, the decision was made to use the SPP and the SICI in combination to provide costs for ambulatory care. A distinctive characteristic of the SPP is that it captures information from all levels of care and on a national level. The costs generated are budgetary, i.e., normative, in nature. In contrast, the SICI provides reports on observed costs. Unlike the SPP, its current implementation covers eight hospitals and it has not been implemented at the primary care level. Although there have been efforts to implement a SICI-NETWORK for the primary care level, these efforts have not been maintained, and the system is not in operation. The ideal option, that of implementing the SICI[13] in a pilot, would have taken at least six months before providing reliable information. Given the limited time available to do this work, this alternative was set aside.

Instead, it was deemed advisable to convert the information on national average budgetary costs at the primary care level into observed costs for the selected areas of observation. To make this possible, a correction factor was calculated for going from one costing method to another, based on the reports on costs provided by the SICI and the SPP at the hospital level. This correction factor was calculated on the basis of the costs of activities commonly costed in both systems.

Then, using the catalogue of health services and their respective cost weightings, costs were established for the procedures in the catalogue, should they be carried out at the primary care level.[14] So that these costs weightings could be adjusted over time, based on technological progress, a re-weighting of costs was developed according to:

- Organ systems, based on the catalogue classification of health services, and
- Groups of procedures, based on the minimum values in each group.

This second alternative is a variation on the method for estimating relative cost weightings. It ensures that technological changes occurring in the reference specialty for the entire price list need not alter the structure of weighted costs when the remaining specialties have not experienced technological changes of the same magnitude. This can be better illustrated by Tables 3 and 4:

[13] This time is generally used to organize costs centers, establish production report processes, and ensure the continuous flow of information to the respective costs unit. The task is still more complciated when the system must be implemented in a services network.

[14] For purposes of illustration, costs were estimated for all clinical procedures with potential to be carried out at the primary care level. It is obvious that the decision-making ability of an average facility would not allow most of these procedures to be performed.

Table 3: Example of Modifying the Cost Weightings for Procedures as a Result of Modification in the Cost of the Base Procedure for the General Valuation. Level of Increase: 10%.

CPT Code	Description	Cost T_0	Weighting		Cost T_1
47010	Hepatotomy, for draining of abscess, cyst	48.47	16.50	10% increase in cost of general medical visit justified by the care of more complicated patients, with more intensive use of physician's time in outpatient consultation	53.36
47015	Laparatomy w/ aspiration and/or injection of parasiticides	46.82	15.94		51.54
47100	Liver biopsy in pan	32.44	11.04		35.71
47120	Total/partial hepatectomy, partial lobectomy	173.98	59.22		191.52
56329	Surgical treatment of non-parasitic liver cysts, via laparoscopy	129.97	44.24		143.07
47135	Liver transplant	986.34	335.72		1,085.73
47300	Marsupialization of liver cyst or abscess	57.10	19.43		62.85
47350	Surgical treatment of liver trauma, 1st, 2nd degree	61.86	21.05		68.09
47361	Surgical treatment of liver trauma, 3rd, 4th degree	143.75	48.93		158.23
47362	Re-exploration of liver to remove plugging compresses	61.86	21.05		68.09
99201	General medical visit	**2.94**	**1.00**		**3.23**

Under a scenario of increased costs for a medical visit due to more time per visit because of a greater influx of more complex cases, the cost estimates for all services would increase although the specific production costs would not have changed.

Table 4: Example of Modification of Cost Weightings for Procedures as a Result of Modification in the Cost of the Base Procedure within the Family of Specialized Procedures. Level of Increase: 10%.

CPT Code	Description	Cost T_0	Weighting		Cost T_1
47010	Hepatotomy, for draining of abscess, cyst	48.47	1.49	10% increase in cost of general medical visit justified by the care of more complicated patients, with more intensive use of physician's time in outpatient consultation but more efficient use of the operating room	46.04
47015	Laparatomy w/ aspiration and/or injection of parasiticides	46.82	1.44		44.47
47100	Liver biopsy in pan	**32.44**	**1.00**		**30.82**
47120	Total/partial hepatectomy, partial lobectomy	173.98	5.36		165.26
56329	Surgical treatment of non-parasitic liver cysts, via laparoscopy	129.97	4.01		123.46
47135	Liver transplant	986.34	30.40		936.90
47300	Marsupialization of liver cyst or abscess	57.10	1.76		54.24
47350	Surgical treatment of liver trauma, 1st, 2nd degree	61.86	1.91		58.76
47361	Surgical treatment of liver trauma, 3rd, 4th degree	143.75	4.43		136.54
47362	Re-exploration of liver to remove plugging compresses	61.86	1.91		58.76
99201	General medical visit	2.94	NA		3.23

With respect to the assumption of increased medical consultation due to more time per visit, but accompanied by more intensive production of services, we see two divergent trends. On one hand, the cost of a general medical visit increases; on the other, the unit costs decrease for a specific group of procedures that are now in greater demand. This second option is also compatible with the modification of costs in a specific segment of services, based on isolated technological changes.

It should be noted that theses cost weightings are estimated on the basis of direct unit costs, and include costs for staff, supplies, and direct inputs and services. Depreciation costs are not included. Also not included are costs for those medications and medical-surgical materials that the patient provides. The referral and counter-referral costs provided institutionally are also not included in the general costing of services.

3.3.3 Results of Costing Process

The unit costs estimated covered the following areas:

1. Outpatient visits
2. Diagnostics support and outpatient treatment.
3. Ambulatory medical procedures

Although the costing systems presented in this report do not allow the routine capture of the costs of prescribing medications and/or surgical material, the services production data from the Villa El Salvador network made it possible to identify the consumption of medications, as well as the extent to which intermediate services are used for the beneficiaries of Free Student Insurance. Thanks to coordination with the SIS, it was possible to access the reimbursement amounts obtained by the SIS from provider facilities. Thus, total costs of care could be estimated for this demand segment. These costs will be presented in the next section of the report.

The costing of preventive/promotional and public health activities encountered a methodological problem. The CPT99 list does not include public health activities, and preventive individual health activities have a greater level of specificity than indicated in the Local Health Programs executed by the CLAS. In addition, since the CPT99 is a list of procedures prepared by the American College of Physicians, it does not include activities associated with odontostomatology care, whether recuperative or preventive/promotional.

Thus, the costs for non-medical and preventive individual care provided by non-medical health professionals were estimated on the basis of direct staff costs per patient or per activity.[15] The following data were used as a reference:

- A physician's compensation ranges between 2,200 and 2,500 new soles at the primary care level.
- A nurse's compensation ranges between 600 and 1,000 new soles.

[15] This approach can be considered reasonable to the extent that the CLAS receive transfers from the public treasury to finance staff costs. Estimating staff costs for each PSL activity makes it possible to link financing with the production of services under the logic of packages, an approach that can be used for medium-term budgetary negotiation.

- A nursing technician's compensation ranges between 400 and 650 new soles.

The estimates obtained were compared with those in the SPP reports to check whether there was proportionality between the costs of one procedure and another. The results of the entire costing process are presented in Annex C.

3.3.4 Limitations of Cost Information

The estimated costs represent a national average for the entire universe of facilities in the country – particularly all costs for recuperative individual treatments. This requires acceptance of the fact that the average operating costs within a single DISA may not coincide with the results presented in this document, i.e., that the costs of production may be substantially different in DISAs that are located on the coast, in the mountains, or in the forest. It should be kept in mind that the degree of resource utilization does not necessarily depend on the facilities alone but also on the characteristics of their environment, as in the case of the mountains or the forests. In these areas, the distances that health workers must cover to provide extramural care in distant and/or dispersed towns create a different balance of intramural/extramural time needed to provide care and thus costs can be higher.

3.4 Criteria for Generating Ambulatory Services Packages

With the different pieces of information that make up the supply of ambulatory services in hand, it was possible to configure packages of services using some elemental criteria:

Continuity of care. A package includes services for the individual or population throughout an entire treatment process, involving one or more contacts with the health facility.

Cost consistency. The composition of services included within a package is sufficiently stable so that the costs assigned to each of its components make it possible in turn to estimate the cost to produce the package. It is no less important that the cost estimates be stable. This means that there must be a minimum level of protocolization of the technical processes and inputs required to carry them out.

Managerial validity. The services packages allow management to make decisions on the planning, execution, monitoring, and comprehensive evaluation of a facility's ambulatory activities.

Theoretical validity.[16] The design of the packages must be understood not only by the facility's management but also essentially by the professional and non-professional providers. In addition, given the increasing and active involvement of civil society in facilities management, identification of the package must be easy to understand, even for the ordinary citizen.

Simplicity. The number of ambulatory packages should not be excessive, so that there can be adequate monitoring and control of the quality of delivery.

For the process of configuring the services packages, it was necessary to critically analyze the available information resources. The information on CLAS production – based on the respective Local Health Programs – provides an overview of the benefits provided in the ambulatory setting.

[16] More commonly known as "face validity" in English language references.

Consistent with the approach based on the major objective that primary care level health services be actively involved in preventive/promotional care, the production of these services is quite orderly. However, the level of detail on recuperative care is much more limited and presented in the aggregate.

In that the services packages are configured on the basis of diagnostic conditions, diagnostic and therapeutic procedures, and medications prescribed and administered, the information provided by MINSA's health information system (HIS) system was considered insufficient. This system, widely used in MINSA, allows for the systematic recording of the following variables:

- Facility
- Provider
- Clinical history
- Origin
- Age
- Sex
- Description of diagnosis
- Diagnostic code (ICD 10)
- Type of diagnosis
- Performance of additional examination

Unlike the HIS, the SEG information system has allowed regular recording of the procedures and treatments provided to the student population. Unfortunately, the operational level of this system has been very uneven, and it is currently in disuse. At least two things weakened the use of the SEG system: 1) The system's principal user has not been the operational level, but rather the reimbursement units located at the DISA and central levels. Thus, managerial use of the information collected did not strengthen the use of this tool, 2) The duplication of information systems. For the student population, information had to be filled in for both the HIS and the SEG. In that reimbursements were not tied to the performance of a certain procedure, there was no need to record information on the procedures performed, but rather on the use of inputs and medications.

In conclusion, the information available for designing the packages was:

- The Local Health Plan of the CLAS for configuring the preventive/promotional and public health packages
- The SEG database for configuring the recuperative care packages.

3.5 Costing of Preventive/Promotional and Public Health Packages

The Local Health Programs (*Programas de Salud Locales*, PSL) carried out by the CLAS follow documents that are managerial, health-related, and legal in nature. The CLAS contractually undertake to perform the activities identified in these documents. Thus, a facility's managerial activity is directed to achieving the agreed upon goals. Since the implementation of the Shared Administration Program in 1994, the Local Health Programs of the CLAS have undergone periodic changes. The PSL version used to prepare this document consists of 89 activities.

This group of activities has been regrouped into 10 packages of primary care services. The information presented corresponds to the Cono Sur micronetwork of the Tacna Regional Health Directorate. Human resources costs were allocated to each of the procedures for which it was not possible to identify a CPT99 item.

Then a comparison was made between the overall cost estimates and the financing that the CLAS received during the year 2000. The existing differences were eliminated using an adjustment factor in each facility within the micronetwork.

To generate the packages, the PSL activities were divided up according to:

1. Whether they were individual or public health activities
2. Whether individual health activities were recuperative or preventive/promotional in nature
3. Whether preventive/promotional activities had a specific target population, based on age or gender.
4. Whether or not recuperative activities targeted health priority conditions.

Using this approach, the following packages were identified:

- **Individual Health Interventions**
  - Interventions of a recuperative nature
    - Interventions with defined target populations
      - **Package 1.** Prioritized recuperative care. Tuberculosis
      - **Package 2.** Maternal-perinatal care without associated morbidity
      - **Package 3.** Prioritized recuperative care for children under age five
  - Interventions without defined target populations
    - **Package 4.** Unprioritized recuperative care
  - Interventions of a preventive/promotional nature
    - Interventions with defined target populations
      - **Package 5.** Child health promotion
      - **Package 6.** Prevention and promotion in reproductive health
      - **Package 7.** Student health promotion

- Interventions without defined target populations
  - **Package 8.** Individual protection against infectious diseases with high epidemiological risk

- **Public Health Interventions**
  - **Package 9.** Preventive/promotional interventions in public health
  - **Package 10.** Strengthening shared administration – co-management

With respect to recuperative care, three packages with well-defined target populations are identified. A first group of users benefiting from these packages of care is the population affected by tuberculosis. The *Prioritized recuperative care. Tuberculosis* package includes all types of activities associated with the treatment of tuberculosis, once diagnosed. Thus, it includes activities for administering anti-tuberculosis treatment, periodic clinical and laboratory follow-up for patients, as well as preventive/promotional activities to prevent and control family foci of reinfection and/or spread of the disease. This package does not include activities carried out by the health facility when tuberculosis is suspected. The principal criterion was clinical and economic consistency. It should be kept in mind that patients being treated can be divided into two broad categories: those who have tuberculosis, and those who have respiratory complaints other than tuberculosis. Understandably, each of these groups has a different therapeutic approach, once the presence of tuberculosis has been discarded or confirmed.

The second population group whose health care importance requires identifying a specific package of care is the maternal-perinatal population. The care considered within this *Maternal-perinatal care without associated morbidity* package covers activities provided in the ambulatory setting, including institutional childbirth and regular check-ups for the mother and newborn. The construction of this package began with the assumption that attended childbirth without complications can be carried out in an ambulatory setting by duly qualified health personnel with adequate infrastructure conditions. By extension, it is understood that abnormally slow deliveries exceed the capacities of the ambulatory setting and merit specialized hospital care.

The third population group that has received special attention with the design of a specific package of care is the pre-school population. In this case, the *Prioritized recuperative care for children under age five* package includes treatment for conditions such as pneumonia, acute diarrheal disease, acute otitis media, and pharyngotonsillitis, which represent a significant burden of morbidity and mortality in this population group.

The package designed as *Unprioritized recuperative care* covers a large population group and a large group of pathologies. It considers the entire population over the age of five, except for pregnant mothers who, as we have seen, are the focus of a specific package of care. It considers treatment of all types of pathology in this remaining population group. In addition, in the population under age five, it covers treatment for pathologies not considered as having priority, as indicated in the preceding paragraph. Given the number of cases and the costs associated with this package, a more detailed analysis was considered necessary. This is presented in the next section.

As in the case of recuperative care, promotional activities can also be organized into packages directed to prioritized groups. One of these groups is the pre-school population targeted by the *Child health promotion* package. This package includes monitoring growth and development in children under age five.

The population of childbearing age is also the target of special care designed to promote and maintain reproductive health in accordance with the individual beliefs and preferences of women and men. The *Prevention and promotion in reproductive health* package has been identified on the basis of this criterion. Thus, it includes information activities in addition to providing and monitoring the use of different birth control methods. Not included is health care provided for the recovery of reproductive health, which represents care associated with infertility and sterility. These activities have a substantially higher cost profile and are preferably provided in facilities of greater complexity.

A third population group for which a package of care has been designed is the student population. This package is called *Student health promotion*. It includes general health education activities as well as specific preventive/promotional activities in the area of odontostomatology.

The package called *Individual protection against infectious diseases with high epidemiological risk* includes all protection activities using vaccines. This step was taken bearing in mind that the cost profile for administering a specific vaccine is basically the same at any age. In this respect, the packages include anti-tetanus vaccination (for both children and women of child-bearing age), anti-measles vaccination, BCG, and DPT. This package, given the criterion considered for its design, could also include vaccination against hepatitis B and yellow fever when justified by the epidemiological profile and when information is available on costs.

Two packages covering public health activities have been designed. They are *Preventive/promotional interventions in public health* and *Strengthening shared administration – co-management*. The first package comprises vector control activities, environmental clean-up, and others. Its benefits explicitly include activities associated with maintaining and improving public health. In contrast, the second package includes activities involved in the process of organizing, prioritizing, allocating resources, and rendering account to civil society on the part of those responsible for administering health resources. Thus, this package includes activities that the CLAS and the management of the facility must carry out to sustain the process of democratization in health, which of themselves also constitute public health activities.

The cost estimates for each of these packages are shown in Table 5.

Table 5. Costing of Ambulatory Services Packages at the Primary Level. Tacna Regional Directorate – Cono Sur Micronetwork. Year 2000.

Name of Package	Total Cost	Cost of Care	Cost Provided	Per Capita Cost
Package 1. Prioritized recuperative care. Tuberculosis	45,415.06	3.72	10.18	1.68
Package 2. Maternal-perinatal care without associated morbidity	21,033.46	6.82	9.90	0.78
Package 3. Prioritized recuperative care in children under age five	25,240.33	3.98	8.24	0.09
Package 4. Unprioritized recuperative care	245,689.99	2.54	3.72	9.10
Package 5. Child health promotion	4,730.72	2.03	5.07	0.18
Package 6. Prevention and promotion in reproductive health	17,164.65	1.98	2.97	0.64
Package 7. Student health promotion	44,185.05	4.65	4.96	1.64
Package 8. Individual protection against diseases with high epidemiological risk	2,908.94	8.54	1.68	0.11
Package 9. Preventive/promotional interventions in public health	19,300.31	4.94	4.94	0.71
Package 10. Strengthening shared administration – co-management	21,525.46	11.99	4.30	0.80

3.6 Costing of Recuperative Packages: Use of HRGs to Provide Greater Detail in Package 4, Unprioritized Recuperative Care

Table 5 illustrates the financial importance of *Unprioritized recuperative care*. It is paradoxical that, as a package, unprioritized care receives the greatest amount of financing provided at the primary care level. The availability of SEG information made possible a somewhat more detailed look at this important segment of activities.

The first difficulty faced in creating the packages was the structure of the SEG database itself. The SEG information was found to be separated into four different databases. One database held information on patient enrollment. A second database contained information on patient diagnoses. A third contained records on procedures performed. A fourth had information on medications consumed. This architecture for organizing the information was consistent with the mechanism through which SEG had been operating, i.e., the SEG concentrated its efforts on retrospective reimbursement of benefits based on overall consumption of inputs and medications reported. Although the data were entered at the patient level, the information needed for the financial transactions did not require this level of detail, but more consolidated information instead.

Upon observing the content of these databases in detail and bearing in mind the considerations required for constructing services packages, it was deemed advisable to construct a single database incorporating in one record the diagnoses, procedures, and medications received by each patient. Given local experience with creating Healthcare Resource Groups for hospital services, it was considered advisable to use the same grouping logic to generate ambulatory HRGs. The advantages that this system offers are the clinical consistency of the groups generated, the consistency of costs with which the system is designed, and the relatively small number of HRGs that make up the overall production of the facility. This latter represents an additional advantage, which is the fact that an HRG could be subdivided into two or more HRGs if this is considered appropriate to the Peruvian reality. This process would not substantially increase the total number of HRGs, although it would give them a more national character. The schematized process in which the grouping by HRGs is integrated as part of the general grouping strategy complementary to the grouping of preventive/promotional and public health interventions is presented in Annex D.

As a result, the data collected were arranged so that they can later be processed by the HRG grouper. The information gathered from the Villa El Salvador micronetwork corresponded to three two-week periods, with a total of 9,981 records. To calculate the number of people served within each HRG generated, a recount was done of the number of cases with a definitive diagnostic category. The processing of the data generated 103 original HRGs, and four error HRGs. These error HRGs covered 0.73 percent of the sample. The distribution of frequencies of these cases by major diagnostic categories is presented in Table 6.

Table 6: Composition of the Sample of SEG Ambulatory Cases, According to Major Diagnostic Categories

	Major Diagnostic Category and/or Body System	HRGs	N	%
A	Nervous System	7	48	0.48%
B	Eyes and Periorbital Area	3	201	2.01%
C	Mouth, Head, Neck and Ears	4	419	4.20%
D	Respiratory Tract	5	60	0.60%
E	Cardiac Surgery and Principal Cardiac Conditions	3	14	0.14%
F	Digestive System	7	974	9.76%
G	Hepatobiliary and Pancreatic System	3	12	0.12%
H	Musculoskeletal System	14	201	2.01%
J	Skin, Breasts and Burns	8	190	1.90%
K	Endocrine and Metabolic System	1	6	0.06%
L	Urinary Tract and Male Reproductive System	8	24	0.24%
M	Female Reproductive System	6	29	0.29%
N	Obstetrics and Neonatal Services	3	32	0.32%
P	Childhood Diseases	18	7185	71.99%
Q	Vascular System	1	1	0.01%
R	Vertebral Surgery and Primary Conditions of the Spinal Column	3	7	0.07%
S	Hematology, Infectious Disease, Poisoning and Non-specific Groups	8	503	5.04%
T	Mental Health	1	2	0.02%
U	Error Groups	4	73	0.73%

As would be expected, most cases in the sample were assigned to the category of Childhood Diseases. This category covers nearly 72 percent of all care. However, this description is too generic and it thus becomes necessary to take a much closer look at the component HRGs. This is shown in Table 8.

Table 7: Detailed Content of the Category *Childhood Diseases.*

	HRG	N	%
P01	Asthma/ Recurrent Wheezing	484	4.85%
P03	Disorder of the Upper Respiratory Tract	3433	34.40%
P04	Disorder of the Lower Respiratory Tract	1109	11.11%
P05	Major Infections (includes Immune Disorders)	84	0.84%
P06	Minor Infections (includes Immune Disorders)	1114	11.16%
P07	Neoplasias	3	0.03%
P08	Febrile Convulsions	1	0.01%
P10	Other Nervous System Disorders	8	0.08%
P12	Other Gastrointestinal/Metabolic Disorders	17	0.17%
P13	Allergies/Poisoning through Ingestion	180	1.80%
P14	Accidental Injury	4	0.04%
P15	Other Gastrointestinal/Metabolic Disorders	257	2.57%
P20	Other Congenital Conditions	2	0.02%
P21	Kidney Disease	125	1.25%
P22	Kidney Disease with Renal Insufficiency	1	0.01%
P23	Blood Disorders	232	2.32%
P24	Skin, Musculoskeletal/Connective Tissue Disorders	129	1.29%
P25	Cardiac Conditions	2	0.02%

Breaking down the major diagnostic categories into their constituent HRGs gives a clearer idea of the type of care provided. However, it may be necessary to further divide these HRGs into others that provide a greater level of information to management levels. By way of illustration, a subdivision of HRGs based on more specific diagnostic categories follows:

- **P04. Disorder of the Lower Respiratory Tract**
  - P04a. Suspected tuberculosis
  - P04b. Other pathologies of the lower respiratory tract
- **P06. Minor Infections (includes Immune Disorders)**
  - P06a. Minor infections
  - P06b. Intestinal infections
  - P06c. Urinary tract infections

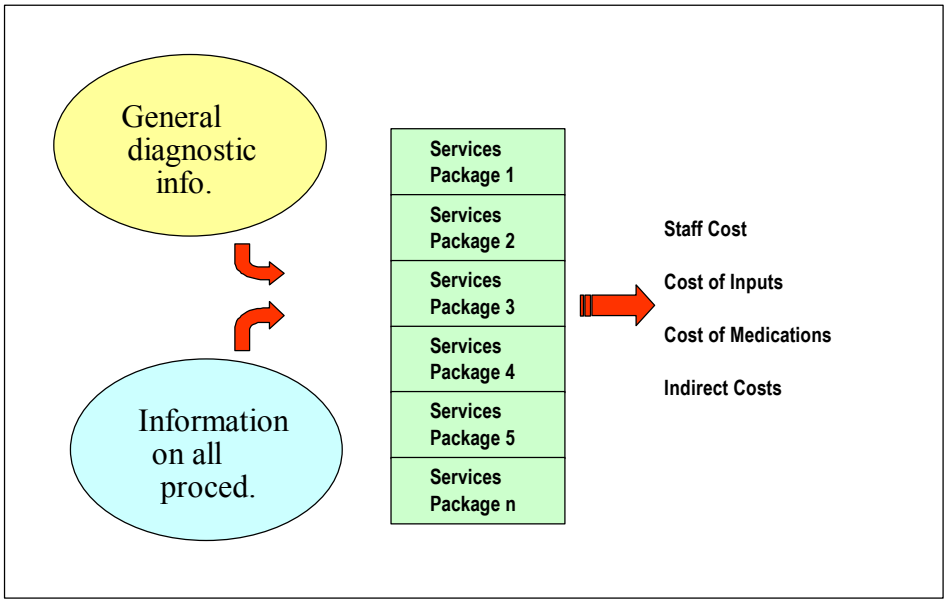
The process of assigning costs to HRGs in this exercise could not be done for each of the records individually. This is because of the relatively ambiguous naming of procedures, laboratory analyses, and medications in the master tables. The assignment of costs would have had to be done manually for each procedure, analysis, and medicine prescribed, which would have taken an excessive amount of time.

As an alternative, total costs generated by the consumption of medications and the performance of procedures were calculated for each HRG and HRG subtype generated. These partial costs were supplemented with staff costs estimated in the SPP. In this way total production costs were obtained for 13 ambulatory HRGs studied. Unlike the estimates done with the Cono Sur micronetwork, these estimates could not be readjusted in the absence of budgetary execution information. These results are shown in Table 8.

Table 8: Costing of Ambulatory HRGs within Package 4, Unprioritized Recuperative Care. Lima Sur Regional Directorate – Villa El Salvador Micronetwork. Year 2000.

Name of Subpackage / HRG	Total Cost	Cost of Care	Cost Provided	Cost per capita
C17. Diagnosis of mouth, head, neck, ears. Category 2, in those under age 70, or uncomplicated cases	20,705.48	9.84	10.78	0.06
F49. Infectious intestinal disorders in those under age 70, or uncomplicated cases	190,401.94	28.92	77.02	0.54
P01. Asthma / Recurrent wheezing	55,908.31	14.44	17.21	0.16
P03. Disorder of the upper respiratory tract	270,077.43	9.83	10.30	0.77
P04a. Suspected tuberculosis	8,033.33	10.68	125.52	0.02
P04b. Other pathologies of the lower respiratory tract	93,913.07	11.57	12.70	0.27
P06a. Minor infections	36,776.45	10.04	11.97	0.11
P06b. Intestinal infections	32,812.96	8.15	10.77	0.09
P06c. Urinary tract infections	10,389.50	8.49	23.61	0.03
P15. Accidental injury	32,427.09	15.77	19.03	0.09
P23. Blood disorders	18,484.36	9.96	33.98	0.05
S13. Fever of unknown origin	21,710.81	14.44	14.91	0.06
S15. Other non-viral infections	21,643.26	10.06	12.53	0.06

Figure 2: Working Strategy for Generating Ambulatory Services Packages and Their Normative Costing



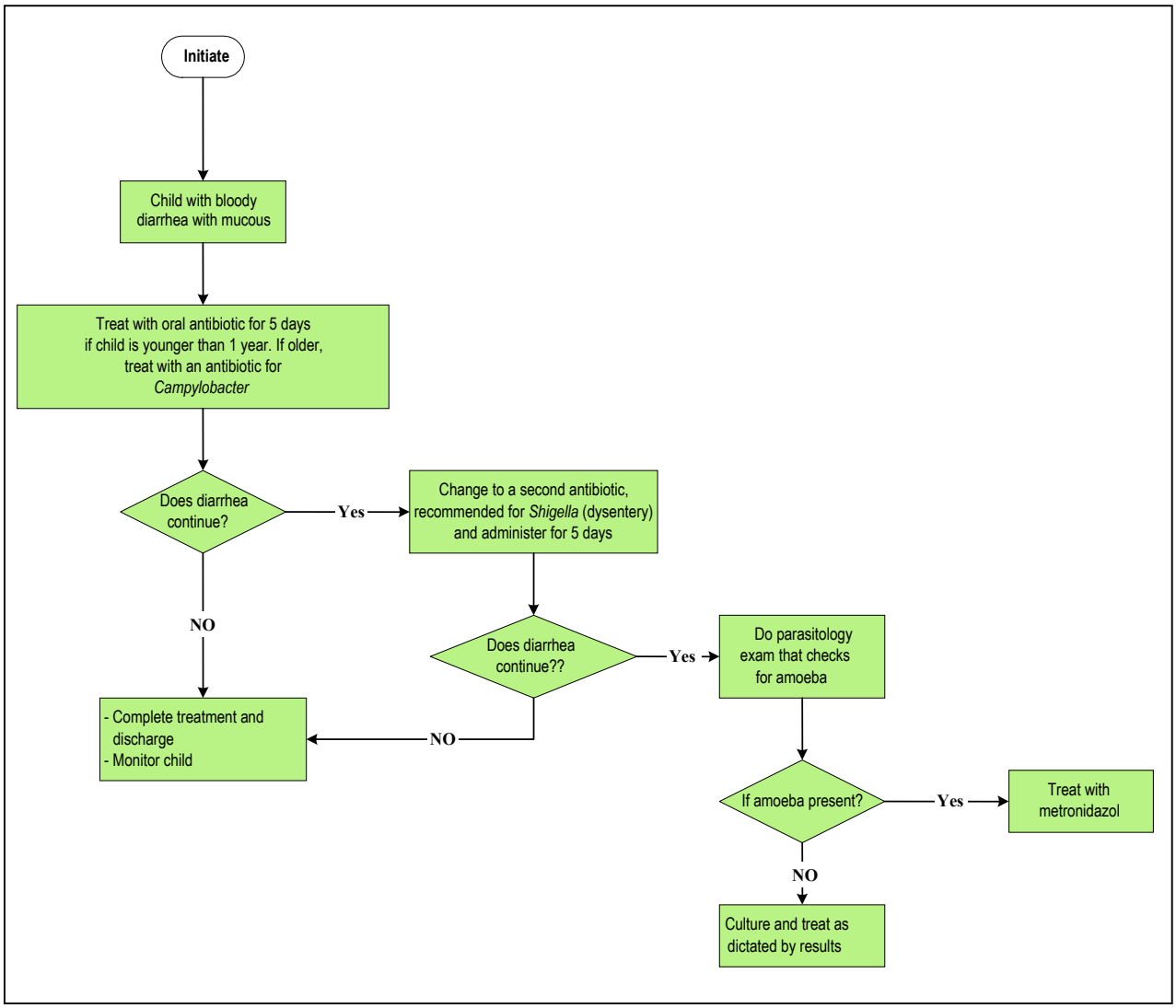
An alternative approach to establishing the costs to provide each package is through a normative approach, i.e., reconstructing the entire treatment process based on a specific pathology. In that each step in the process would have an assignable cost, at the end of the exercise we would also have a cost for providing this package, under ideal conditions. This process is shown schematically in Figure 3.

This exercise was repeated with a limited number of ambulatory HRGs. The entire process of care in these ambulatory HRGs was constructed considering the predominant diagnoses. Based on these diagnoses, the treatment protocols followed to resolve them were identified. The protocols used come from MINSA's Simplified Manual of Child Health Care. One of these protocols is presented in Figure 3 and refers to the management of dysenteric diarrhea.

The ambulatory HRGs costed were as follows:

1. Minor conditions of the head, neck, and ears
2. Infectious intestinal diseases in those under age 70, cases without complications
3. Asthma
4. Pediatric disorders of the upper respiratory tract
5. Suspected tuberculosis

Figure 3: Protocol for Treating Dysenteric Diarrhea. MINSA 2001



In all these ambulatory HRGs, except for Suspected Tuberculosis, two normative costing exercises were carried out. The results are shown in Annex E. As would be expected, costs per package offered and delivered vary within a single HRG depending on the treatment strategy chosen. Obviously, the variability of costs can increase if the diagnostic strategy is changed, or if the case severity increases. For example, in the case of asthma, the cost to treat a light to moderate crisis is S/ 30.69, whereas the cost to treat a severe crisis rises to S/ 56.67. The observed costs for this same condition amount to S/ 17.21. When the normative costs of medications are selected, they amount to S/ 24.27. The difference seen between the two approaches requires a more in-depth study, and could be justified by some level of under-recording, the lack of medications available, some level of under-medication, or possibly a treatment protocol not in line with reality. For purposes of illustration, Table 9 presents the treatment protocols costed for the ambulatory HRG for asthma.

Table 9: Normative (Standard) Costing of the Scheme for Ambulatory Management of Asthma.

Asthma Light to Moderate Crisis	Time	Cost	Soles
Initial Visit			
Triage – Admission	1	0.07	0.07
Anamnesis	3	0.20	0.60
Preferential physical exam	4	0.20	0.80
Preparation of initial treatment	2	0.20	0.40
Nebulization (includes oxygen)	1	10.12	10.12
Reevaluation	5	0.20	1.00
Preparation of control treatment	3	0.20	0.60
Salbutamol INH	1	14.15	14.15
Control Visit 1			
Triage – Admission	5	0.07	0.35
Anamnesis and preferential exam	8	0.20	1.60
General instructions and discharge	5	0.20	1.00
Total			**30.69**

Asthma Severe Crisis, without Hospitalization	Time	Cost	Soles
Initial Visit			
Triage – Admission	1	0.07	0.07
Anamnesis	3	0.20	0.60
Preferential physical exam	4	0.20	0.80
Preparation of initial treatment	2	0.20	0.40
Nebulization (includes oxygen)	1	10.12	10.12
Sodium chloride	1	2.28	2.28
Hydrocortisone EV	1	11.13	11.13
Reevaluation (4)	9	0.20	7.20
Chest x-ray	1	6.68	6.68
Preparation of control treatment	3	0.20	0.60
Control Visit 1			
Triage – Admission	5	0.07	0.35
Anamnesis and preferential exam	8	0.20	1.60
Salbutamol INH	1	14.15	14.15
General instructions and discharge	5	0.20	1.00
Total			**56.97**

3.7 Integration of Payment Mechanisms at the Micronetwork Level

With the information presented above, the reader has the costing for collective and individual health packages in both preventive/promotional and recuperative health care. Unfortunately, the costs structures correspond to micronetworks located in different DISAs with different organizational structures, which does not allow budgetary integration based on primary information. Thus, for illustrative purposes, both capitated budgets were integrated as if they were part of the financial framework of the Cono Sur micronetwork in Tacna. To do this, we assumed that the production structure of more frequent ambulatory HRGs reflected 100 percent of the recuperative care in this micronetwork. Thus, the capitated budgets of each HRG were adjusted proportionally to cover the assignable amount to the package called *Unprioritized recuperative care.* The breakdown of the budgetary segment that is set by prospective capitation would appear as shown in Table 10. The per capita budget for these public health services would amount to S/15.72.

Table 10: Simulation of the Structure of the Budget Allocated by Capitation for the Cono Sur Micronetwork

Name of Package	Capitated Budget	Total Budget
Individual Health Interventions		
Recuperative Interventions	**11.66**	**314,662.84**
Interventions with defined target populations	**2.56**	**68,972.85**
Prioritized recuperative care. Tuberculosis	1.68	45,415.06
Maternal/perinatal care without associated morbidity	0.78	21,033.46
Prioritized recuperative care in children under age five	0.09	2,524.33
Interventions without defined target populations	**9.10**	**245,689.99**
Diagnosis of mouth, head, neck, ears. Category 2, in those under age 70 or cases without complications	0.23	6,255.05
Infectious intestinal disorders in those under age 70, or cases without complications	2.13	57,519.70
Asthma, recurrent wheezing	0.63	16,889.69
Disorder of the upper respiratory tract	3.02	81,589.36
Suspected tuberculosis	0.09	2,426.84
Other pathologies of the lower respiratory tract	1.05	28,370.78
Minor infections	0.41	11,110.03
Intestinal infections	0.37	9,912.67
Urinary tract infections	0.12	3,138.63
Accidental injury	0.36	9,796.10
Blood disorders	0.21	5,584.05
Fever of unknown origin	0.24	6,558.75
Other non-viral infections	0.24	6,538.35
Preventive/Promotional Interventions	**2.56**	**68,989.36**
Interventions with defined target population	**2.45**	**66,080.42**
Child health promotion	0.18	4,730.72
Prevention and promotion in reproductive health	0.64	17,164.65
Promotion of student health	1.64	44,185.05
Undefined interventions with target population	**0.11**	**2,908.94**
Individual protection against diseases with high epidemiological risk	0.11	2,908.94
Public Health Interventions	**1.51**	**40,285.77**
Preventive/promotional public health interventions	0.71	19,300.31
Strengthening of shared administration – Co-management	0.80	21,525.46

The budget calculated in this way amounts to S/424,477.97. Of this amount, 74.1 percent is allocated to recuperative care, 16.3 percent to individual preventive/promotional care, and the remaining 9.6 percent to public health activities. Revisiting the concept of preferential handling of preventive/promotional care, under specific circumstances, the amount of reference retrospective reimbursement for this segment of care must be made explicit. To do this, we must include prevention and promotion in child health, prevention in reproductive health, student health promotion, and protection against diseases with high epidemiological risk. Through the mixed financing mechanism proposed in Report 1 (Telyukov et al. 2002), we will see that the CLAS pays retrospective reimbursements in these packages whenever its operational goals of preventive/promotional and public health care are above 80 percent. This means that if the capitated budget finances 80 percent of this care, 20 percent of care remains that can be financed with retrospective reimbursements. Based on the unit cost data by package delivered that is provided in Table 5, the budget required to reimburse this 20 percent of care could amount to 6.5 percent of the overall prospective budget. These data are broken down in Table 11.

Table 11: Simulation of the Structure of the Budget Allocated by Retrospective Reimbursements for the Cono Sur Micronetwork

	Total budget	% packages w/ capitated budget	Budget capitated by package	% packages w/ reimburse-ment	Reimburse-ment for additional package given	Estimated budget ceiling	% Additional income
Individual Health Interventions							
Recuperative interventions	314,662.84	100%	11.66	0%			0.0%
Preventive/promotional interventions.	68,989.36	80%	2.56	20%		17,247.34	4.1%
Package 5. Child health promotion	4,730.72	80%	0.18	20%	5.07	1,182.68	0.3%
Package 6. Prevention/promotion in reprod. health	17,164.65	80%	0.64	20%	2.97	4,291.16	1.0%
Package 7. Student health promotion	44,185.05	80%	1.64	20%	4.96	11,046.26	2.6%
Package 8. Protection against diseases w/ high epidemiological risk	2,908.94	80%	0.11	20%	1.68	727.24	0.2%
Public Health Interventions	40,825.77	80%	1.51	20%		10,206.44	2.4%
Package 9. Prev./prom. interventions in public health.	19,300.31	80%	0.71	20%	4.94	4,825.08	1.1%
Package 10. Strengthening Shared Administration – co-management	21,525.46	80%	0.8	20%	4.3	5,381.37	1.3%
Total	424,477.97	NA	15.72	NA	NA	27,453.78	6.5%

Given that this financial support is not anticipated in the original production and budgetary structure, it represents net income for the facility. Thus, it also represents a direct incentive for improving performance, which could well be made explicit through better working conditions. In addition, greater emphasis is placed on preventive/promotional care, in that this is the type of care that somehow makes this type of *organizational effectiveness bonus* viable.

Financing derived from copayments is the third payment modality for ambulatory services. Unlike retrospective reimbursements that are directed to preventive/promotional activities, copayments are used to finance recuperative care that is not considered in the capitated budget, i.e., they cover those recuperative activities that are considered in the capitated budget but that for which demand is unexpectedly higher. Copayments also include *new* recuperative activities, or activities of a type not previously considered. If the rate users are charged is exactly the same as the cost of care – in order to avoid financial risk to the micronetwork – a rating scheme differentiated for each ambulatory HRG would be as presented in Table 12. Another implementation alternative would be to charge a flat copayment per visit, following current practice.

Table 12: Structure of Copayments for Recuperative Care in the Cono Sur Micronetwork

Name of subpackage / HRG	Copayment
C17. Diagnosis of mouth/head/neck/ears. Cat. 2, in < 70, cases w/o complication	9.84
F49. Infectious intestinal disorders in < 70, or cases w/o complications	28.92
P01. Asthma / Recurrent wheezing	14.44
P03. Disorder of the upper respiratory tract	9.83
P04a. Suspected tuberculosis	10.68
P04b. Other pathologies of the lower respiratory tract	11.57
P06a. Minor infections	10.04
P06b. Intestinal infections	8.15
P06c. Urinary tract infections	8.49
P15. Accidental injury	15.77
P23. Blood disorders	9.96
S13. Fever of unknown origin	14.44
S15. Other non-viral infections	10.06

The amount of recuperative care not provided for within this production structure may represent 10 percent of total care. Thus, the flow of funds for such care also constitutes additional income, [but] only when the volume and type of such care is not incorporated within the packages contracted for and financed by the USIS or PAAG.

At the end of this entire process, it is possible to integrate these three payment modalities and thus to obtain the estimate of the overall budget of the Cono Sur Micronetwork. That budget is presented in Table 13.

Table 13: Budget of the Cono Sur Micronetwork Organized by Payment Mechanism

Name of Package	Amount of Financing by Source and Mechanism			
	Ordinary Resources		RDR	Total
	Capitation	Reimb.	Copayment Unit[1]	
Individual Health Interventions				
Recuperative Interventions	314,662.84	NA	NA	314,662.84
Interventions with defined target populations	68,972.85	NA	NA	68,972.85
Prioritized recuperative care. Tuberculosis	45,415.06	NA	NA	45,415.06
Maternal-perinatal care w/o associated morbidity	21,033.46	NA	NA	21,033.46
Prioritized recuperative care in children under age five	2,524.33	NA	NA	2,524.33
Interventions w/o defined target populations	245,689.99	NA	NA	245,689.99
Diagnosis of mouth, head, neck, ears. Category 2, <70 or cases w/o complications	6,255.05	NA	9.84	6,255.05
Infectious intestinal disorders in < 70, or cases w/o complications	57,519.70	NA	28.92	57,519.70
Asthma, recurrent wheezing	16,889.69	NA	14.44	16,889.69
Disorder of upper respiratory tract	81,589.36	NA	9.83	81,589.36
Suspected tuberculosis	2,426.84	NA	10.68	2,426.84
Other pathologies of the lower respiratory tract	28,370.78	NA	11.57	28,370.78
Minor infections	11,110.03	NA	10.04	11,110.03
Intestinal Infections	9,912.67	NA	8.15	9,912.67
Urinary tract infections	3,138.63	NA	8.49	3,138.63

	Amount of Financing by Source and Mechanism			
Accidental injury	9,796.10	NA	15.77	9,796.10
Blood disorders	5,584.05	NA	9.96	5,584.05
Fever of unknown origin	6,558.75	NA	14.44	6,558.75
Other non-viral infections	6,538.35	NA	10.06	6,538.35
Preventive/Promotional Interventions	68,989.36	17,247.34	NA	86,236.70
Interventions with defined target populations	66,080.42	16,520.10	NA	82,600.52
Child health promotion	4,730.72	1,182.68	NA	5,913.40
Prevention and promotion in reproductive health	17,164.65	4,291.16	NA	21,455.81
Student health promotion	44,185.05	11,046.26	NA	55,231.31
Interventions with no defined target populations	2,908.94	727.24	NA	3,636.18
Individual protection against diseases with high epidemiological risk	2,908.94	727.24	NA	3,636.18
Public Health Interventions	40,825.77	10,206.44	NA	51,032.21
Preventive/promotional interventions in public health	19,300.31	4,825.08	NA	24,125.39
Strengthening of shared administration – Co-management	21,525.46	5,381.37	NA	26,906.83
Total	424,477.97	27,453.78		451,931.75

[1.] Since recuperative care is covered by copayment subject to demand, the copayment amounts have only been indicated for each subpackage. Thus, the subtotals for each package only involve financing derived from ordinary resources.

4. Conclusions and Recommendations for Future Steps

This design report substantiates the methodological approaches suggested in the earlier report prepared in the context of experience with the Ambulatory Payment Innovation (Telyukov et al. 2002). The integration of the technical products offered in both reports covers the tools that are considered essential to carry out the change in the payment mechanism for primary care level services. Understandably, moving ahead with this proposal allows for a reconfiguration of political power in the various agencies of MINSA, with an important institutional gain. However, it will also be necessary to estimate the steps that make it possible to go from this laboratory simulation to actual operating conditions. All these considerations are presented below.

4.1 Technical Products

The technical products covered in this document are:

- A proposed mechanism for integrated budgeting and payment of ambulatory services, converging in a single provider. In this respect, a budgeting proposal has been designed in which a portion of the budget is set by capitation, another portion is set by reimbursements tied to procedures, and a third portion is tied to direct fees for service.
- Definition of the organizational configuration of services to which the proposal is applicable. This is presented in Figure 1, and details the composition of the micronetwork from which the information has been drawn. The internal characteristics of this organization are presented in Annex A.
- Organization of the production structure of individual ambulatory services based on an exhaustive clinical classification. This is presented in detail in Annex B, through the CPT99 list with its respective equivalents in the SEG list.
- Configuration of services packages for individual health services using the Healthcare Resource Groups methodology, complemented by services packages for public health care, based on the Local Health Plans of the CLAS. This represents an important contribution so that the financial integration of SIS funds with PAAG funds will also have a level of benefits integration. See Annexes D and F.
- Transition from the process of isolated services accounting to service packages accounting. See Annexes C, D, and E.

4.2 Policy Implications

The potential application of the tools presented will make it possible to:

- Strengthen MINSA initiatives designed to exploit the possibilities that a single system for classifying individual services provides for exchanging services with EsSALUD.
- Strengthen Comprehensive Health Insurance, providing a more varied yet feasible idea of the ways in which services can be financed, expanding the horizon beyond direct and retrospective reimbursement. This means enhancing options for selecting payment mechanisms with a system that allows for better cost containment and the sharing of financial risks with the service provider.
- Strengthen shared administration and the CLAS through improvements in the structure of activities to be contracted, at the same time facilitating the monitoring of services based on services packages and at the micronetworks level.

4.3 Recommendations to Providers of Ambulatory Services on Implementing New Payment Mechanisms

The innovation of the approaches to financial management of government health services first goes through a process in which the two documents prepared in the context of the Ambulatory Payment Innovation are distributed. This clarifies the opportunities and the financial risks to which both the USIS and the PAAG will be exposed in their capacity as financing agents, as will the networks, micronetworks, and CLAS in their capacity as local executors of the agreed upon health benefits.

Knowledge of the scope of this initiative will allow all the institutional actors to contribute their knowledge and experience for preparation of the terms of reference under which the implementation of new budgeting and payment mechanisms can be operational. These terms of reference will identify the institutional actors and projects involved. A preliminary list of these actors could include:

- Ministry of Economics and Finance
- Comprehensive Health Insurance Unit
- General Individual Health Directorate
- Management Agreements Administration Program
- Program of Shared Administration - CLAS
- General Planning Office
- General Office of Statistics and Informatics
- PARSALUD
- PHR*plus*

- Project 2000

This document will also identify the institutional requirements for carrying out the experiment in implementing new ambulatory payment mechanisms. The discussion with the USIS made it clear that the implementation – on a national scale – of a new payment mechanism requires finding solid evidence to justify it.

Thus, the financial and health performance associated with the new payment mechanisms must be compared with the mechanism already in existence. This prospective and controlled process of comparison may take about two years before providing reliable evidence. However, this not does mean that during the process there will be no dissemination of those methods that are found to contribute to improving the management of public funds in health. A preliminary list of items for discussion and institutional definition by this body includes the following (see also Figure 4):

1. Identification of the criteria for selecting pilot areas

2. Inclusion of hospitalization funds management within financial management capacities

3. Organizational elements prior to the operation of pilots, such as the formal elements that define the pilot networks and micronetworks

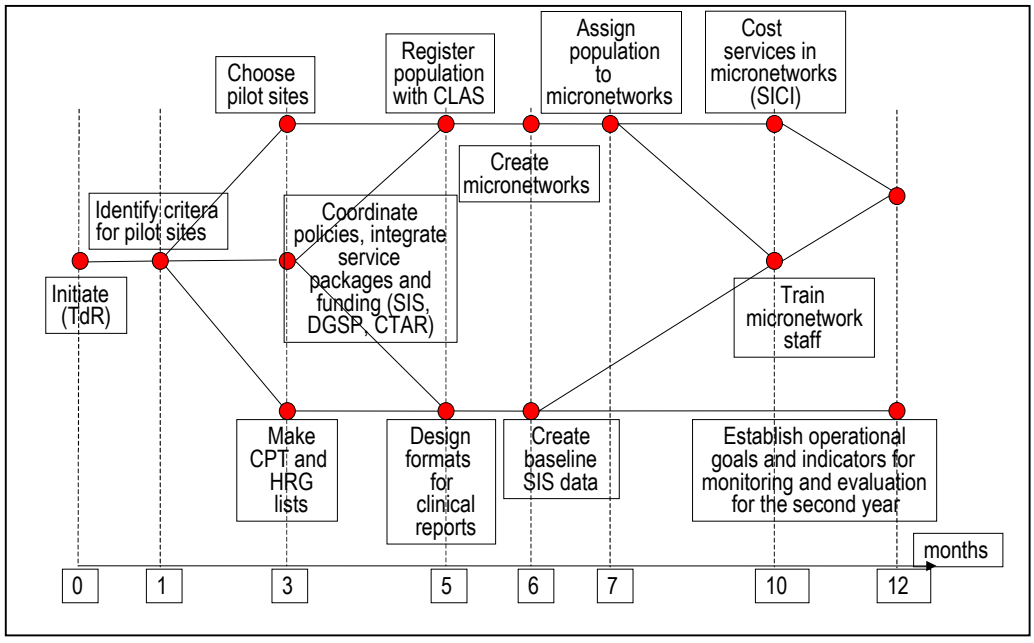
4. Financial integration mechanisms in the pilots

5. Development of comprehensive clinical information systems, not only in administrative and financial terms but also in clinical terms, with the hospitalization area

6. Design of tools for recording and enrolling beneficiaries

7. Utilization review and care documentation system standards

Figure 4: Chronogram to Facilitate the Piloting of New Payment Methods for Ambulatory Care in Peru



The determination of the technical agenda precedes the conduct of training activities for the selected pilots. The points to be discussed in training activities include the use of instruments that will allow for better management of the resources that the pilots have, whether through ordinary resources or through reimbursements/prospective disbursements from USIS/PAAG.

A particularly useful tool for this preparatory phase is the Costs and Income Information System. This tool will make it possible to measure the costs of production for both payment modalities. It will also make it possible to measure the transaction costs associated with each of these options. At the same time, it will make it possible to gradually introduce some improvements in the payment mechanism currently in effect, since:

1. It will be possible to know the operating costs of different facilities, whether separate or part of a network, with different geographic and organizational profiles. Given that each profile would have differentiated operating costs, the reimbursement levels would also be much fairer.

2. It will contribute to further clarification of the portfolio of services offered at each facility within the network or micronetwork. This in turn will make transactions between the purchasing agencies and the providers easier.

3. It will be possible for estimated costs to be compared from facility to facility, and it will be possible to know the reasons – beyond the payment mechanism – that produce these differences.

Having an information system on operating costs is practically the last preparatory activity before starting the operation of the pilots, whether with retrospective reimbursement alone or prospective capitation supplemented by reimbursements and copayments. This information makes preparation from an exhaustive baseline possible, against which the results of the pilot experiment can be evaluated.

Annex A: Local Health Program Model Applied to the CLAS

TABLE A
AVAILABLE HUMAN RESOURCES - D. Legislativo N° 276

PROFESIONAL		PERSONAL DISPONIBLE POR CONDICION LABORAL				HORAS DE TRABAJO AL AÑO DISPONIBLES (1 x 1,632)
		N	C	S	TOTAL	
1	Medico				0	0
2	Odontologo				0	0
3	Enfermera				0	0
4	Obstetriz				0	0
5	Psicologo				0	0
6	Trabajador Social				0	0
7	Nutricionista				0	0
8	Tecnologo medico/Biologo				0	0
9	Quimico Farmaceutico				0	0
10	Otros profesionales de salud				0	0
11	Profesionales administrativos				0	0
12	Tecnico de Enfermeria				0	0
13	Auxiliar de Enfermeria				0	0
14	Tec. Saneam. Ambiental				0	0
15	Tecnicos administrativos				0	0
16	Otro personal (especificar)				0	0
	Total	0	0	0	0	0

N = NOMBRADO
S = SERUMS
C = Contratado por la Direccion de Salud (asistencial y/o administrativo) o por otra fuente que no sea el PAAG-SBPT-AC ni de Recursos Directamente Recaudados (RDR) de la asociacion CLAS.

NOTA: No considerar a los SERUMS EQUIVALENTES.

TABLE B
NUMBER OF PERSONNEL AVAILABLE FOR REGIONAL TRANSFER

PERSONAL	PLAZAS A SER PRESUPUESTADAS POR DURACION DE JORNADA LABORAL			
	6 Horas	8 Horas	8+2 Horas	TOTAL
Médico				0
Odontólogo				0
Enfermera				0
Obstetriz				0
Psicologo				0
Trabajador Social				0
Nutricionista				0
Tecnólogo medico				0
Biólogo				0
Químico Farmacéutico				0
Otros prof. de la salud				0
Profesionales administrativos				0
Técnico de Enfermería				0
Técnico de laboratorio				0
Otros técnicos de salud				0
Auxiliares de salud				0
Técnicos administrativos				0
Otro tipo de personal				0
(especificar)				0
Total	**0**	**0**	**0**	**0**

TABLE C
NUMBER OF PERSONNEL AVAILABLE WITH OTHER FUNDING SOURCES (PUBLIC AND PRIVATE SECTORS)

PERSONAL	PLAZAS A SER PRESUPUESTADAS POR DURACION DE JORNADA LABORAL			
	6 Horas	8 Horas	8+2 Horas	TOTAL
Médico				0
Odontólogo				0
Enfermera				0
Obstetriz				0
Psicologo				0
Trabajador Social				0
Nutricionista				0
Tecnólogo medico				0
Biólogo				0
Químico Farmacéutico				0
Otros prof. de la salud				0
Profesionales administrativos				0
Técnico de Enfermería				0
Técnico de laboratorio				0
Otros técnicos de salud				0
Auxiliares de salud				0
Técnicos administrativos				0
Otro tipo de personal				0
(especificar)				0
Total	**0**	**0**	**0**	**0**

TABLE D
RESOURCES REQUIRED FOR PSL 2002
NUMBER OF SUPPORT STAFF AVAILABLE FOR CENTRAL LEVEL TRANSFER

PERSONAL	PLAZAS A SER PRESUPUESTADAS POR DURACION DE JORNADA LABORAL			TOTAL
	6 Horas	8 Horas	8+2 Horas	
Médico				0
Odontólogo				0
Enfermera				0
Obstetriz				0
Psicologo				0
Otros Profesionales (*)				0
Técnico de Enfermería				0
Técnico de laboratorio				0
Tecnico de Farmacia				0
Otros tecnicos (*)				0
TOTAL	**0**	**0**	**0**	**0**

(*) Debe precisar el tipo de recurso humano a contratar, justificado en el PSL. Fuente: Tabla N° 3

ASIGNACION DE RACIONAMIENTO

GRUPO OCUPACIONAL	NUMERO DE RR.HH.
Medico (gestion y asistencial)	
Prof. No Medico	
Tecnico de Enfermeria.	
TOTAL	

TABLE E
BUDGET FOR ALL RESOURCES FOR IMPLEMENTATION OF THE LOCAL HEALTH PROGRAM

MODALIDAD DE TRABAJO	TRANSFERENCIAS NIVEL CENTRAL (a)		TRANSFE-RENCIAS REGIONALES RDR (b)	OTRAS FUENTES (Sector Publico y Sector Privado)(c)	TOTAL
	40	24	RDR		
Racionamientos					0.00
Contratos de 6 horas	0.00				0.00
Contratos de 8 horas	0.00				0.00
Contrato de 8+2 horas	0.00				0.00
Servicios No Personales					0.00
Bienes y Servicios	0.00				0.00
TOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

* Debe incluir todos los montos a gastar en cada uno de los rubros especificados

TABLE F
ECONOMIC RESOURCES, 2002 FOR HEALTH SERVICE DELIVERY (OPERATING EXPENSES)

FUENTE DE FINANCIAMIENTO		REMUNE-RACION	BIENES Y SERVICIOS	SNP	RACIONA-MIENTO	TOTAL
Transferencia del Nivel Central (AC) 40		0.00	0.00			0.00
Remesas del Nivel Central (AC) Partida 24					0.00	0.00
Recursos Directamente Recaudados	Prestacion de servicios y otros					0.00
	Utilidad en Farmacia (*)					0.00
	Seguro Escolar					0.00
	Seguro Materno Infantil					0.00
	Otros Ingresos					0.00
Remesas de Programas Nacionales						0.00
Otras Fuentes (Gobierno Regional, Proyectos, municipios, ONG, Iglesia.)						0.00
Gastos de los RDR para cubrir indigencia						0.00
TOTAL		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

(*) Corresponde al 15% de las Ventas de Medicamentos

TABLE G
TRANSFERS REQUESTED AT THE CENTRAL LEVEL

CONCEPTOS (A)	MENSUAL A = ORDINARIAS	ANUAL
Por Transferencia (40) Remuneraciones A1	0.00	0.00
Por Transferencia (40) Bienes y Servicios A2	0.00	0.00
Por remesas (24) Racionamiento A3		0.00
TOTAL	**0.00**	**0.00**

TABLE H
MONTHLY BUDGET REQUESTED AT CENTRAL LEVEL

CONCEPTO	REMUN. (A)	SNP (B)	BIENES Y SERVICIOS (C)	TOTAL 40 (A+B+C) = D	TOTAL 24 (E)	TOTAL (D+E)
ENERO	0.00		0.00	0.00		0.00
FEBRERO	0.00		0.00	0.00		0.00
MARZO	0.00		0.00	0.00		0.00
ABRIL	0.00		0.00	0.00		0.00
MAYO	0.00		0.00	0.00		0.00
JUNIO	0.00		0.00	0.00		0.00
JULIO	0.00		0.00	0.00		0.00
AGOSTO	0.00		0.00	0.00		0.00
SETIEMBRE	0.00		0.00	0.00		0.00
OCTUBRE	0.00		0.00	0.00		0.00
NOVIEMBRE	0.00		0.00	0.00		0.00
DICIEMBRE	0.00		0.00	0.00		0.00
TOTAL	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

TABLE I
SUMMARY OF PERSONNEL NUMBERS AVAILABLE FROM CLAS FOR THE IMPLEMENTATION OF THE LOCAL HEALTH PROGRAM

TIPO PROFESIONALES	PLAZAS PRESUPUESTADAS POR TODAS LAS FUENTES							TOTAL DE RR. HH.
	D. LEG. 276			CONTRATOS D. LEG. 728			S.N.P.	
	N o C x TP	S	R	06	08	08 + 02		
Médico								0
Odontólogo								0
Enfermera								0
Obstetriz								0
Psicologo								0
Trabajador Social								0
Nutricionista								0
Tecnólogo medico								0
Biólogo								0
Químico Farmacéutico								0
Otros prof. de la salud								0
Profesionales administrativos								0
Técnico de Enfermería								0
Técnico de laboratorio								0
Otros técnicos de salud								0
Auxiliares de salud								0
Técnicos administrativos								0
Otro tipo de personal								0
(especificar)								0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Annex B: Interface of SEG-CPT99 Procedures

Annex C: Costing of Assuming Individualized CPT Services

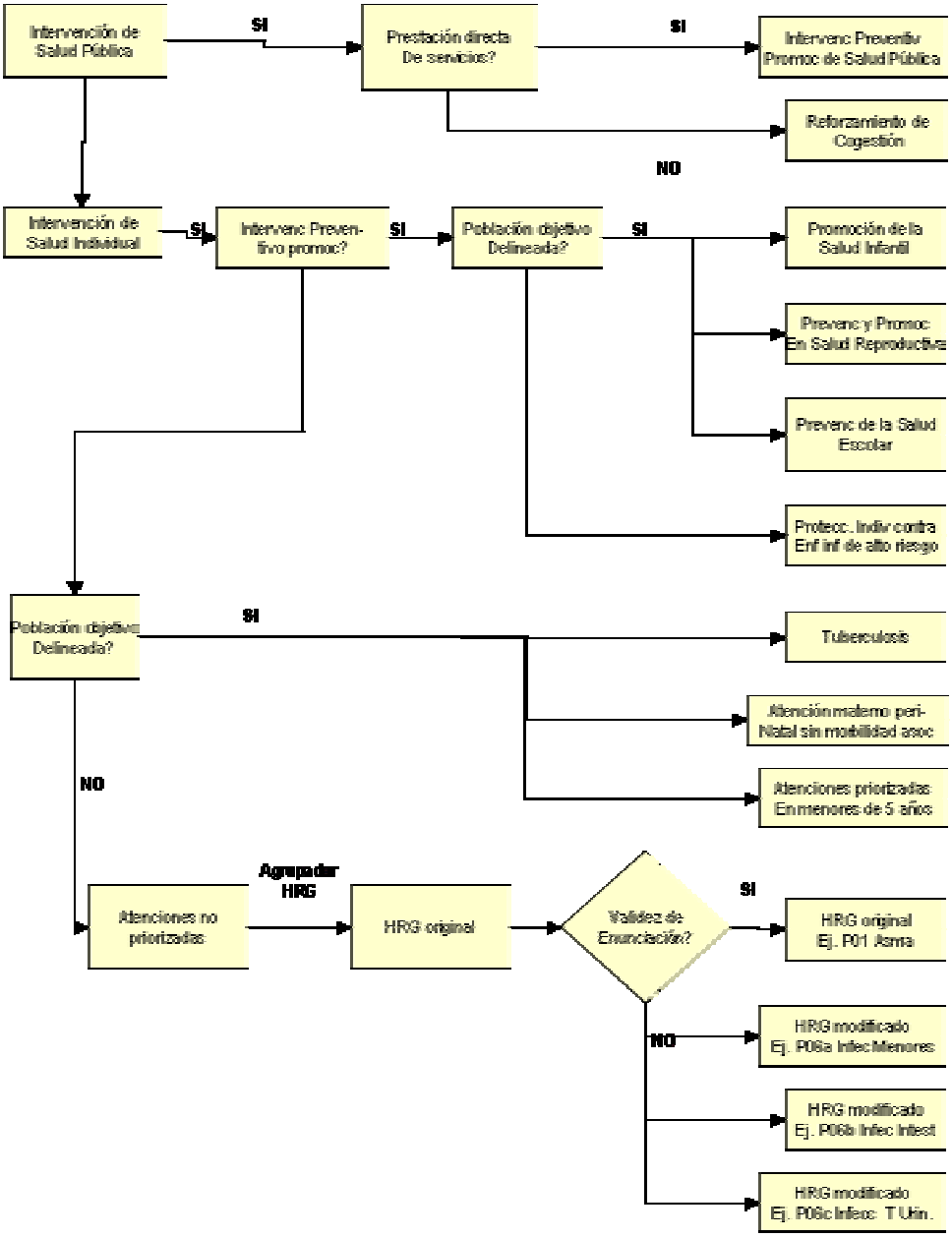
Annex D: Cost Estimates of Assuming Preventive/Promotional and Public Health Procedures

Actividad del Programa de Salud Local	Costo Estimado, S/	
	Centro de Salud	Puesto de Salud
Consultas Clínicas	6.13	3.50
Consultas Dentales	3.50	2.00
Consultas de Psicología	3.50	2.00
Atenciones de Tópico	54.15	27.45
Visitas a pacientes internados	7.16	4.09
Otros	7.16	4.09
Vacunación BCG (RN)	1.15	1.06
Vacunación APO < 1 año	1.15	1.06
Vacunación DPT < 1 año	1.15	1.06
Vacunación Antisarampionosa 1 año	1.15	1.06
Vacunación BCG 1 a 4 años	1.15	1.06
Vacunación APO 1 a 4 años	1.15	1.06
Vacunación DPT 1 a 4 años	1.15	1.06
Vacunación Antisarampionosa 1 a 4 años	1.15	1.06
Vacunaciones Toxoide Tetánico en MEF	1.15	1.06
Vacunación Antiamarílica	1.15	1.06
Vacunación contra Hepatitis en niños	1.15	1.06
CRED < 1 año	3.50	2.00
CRED 1 año	3.50	2.00
CRED 2 a 4 años	3.50	2.00
Atenciones de Consejerìa en Salud Reproductiva	3.50	2.00
Toma de PAP	3.50	2.00
Examen de Mama	7.16	4.09
Protegidas x Preservativos	1.75	1.00
Protegidas x Tabletas Vaginales	1.75	1.00
Protegidas x Métodos Parenterales	1.75	1.00

Protegidas x Métodos Orales	1.75	1.00
Protegidas x Dispositivo Intrauterino (DIU)	13.28	
Protegidas Métodos Definitivos	7.16	4.09
Controles Prenatales BRO	3.50	2.00
Controles Prenatales ARO	7.16	4.09
Atención de Parto	144.62	
Control de Puerperio	3.50	2.00
Atención y examen del Recién Nacido	6.13	3.50
Topicación con Flúor	1.84	1.05
Descarte dental en escolares	3.50	2.00
Descarte dental en gestantes	3.50	2.00
Descarte de enfermedades crónicas en escolares	6.13	3.50
Entrega de Alimentos (PANFAR, PANTBC)	4.33	4.33
Vacunación de Perros	1.15	1.06
Otros	6.13	3.50
Atecnion de niños < 5 años con Neumonia (NG y EMG)	6.13	3.50
Atencion de niños < 5 años con faringo amigdalitis supurada	6.13	3.50
Atencion de niños < 5 años con otitis media aguda	6.13	3.50
Atencion de niños < 5 años con diarrea y con deshidratacion	6.13	3.50
Atenciòn de casos de còlera en toda la población	6.13	3.50
Atenciòn de Tuberculosis	6.13	3.50
Atenciòn de Malaria P. Vivax	6.13	3.50
Atenciòn de Malaria P. Falciparum	6.13	3.50
Atenciòn de Bartonelosis	6.13	3.50
Descarte de Muestras de Esputo	0.56	0.28
Descarte de Dengue (suero)	3.50	2.00
Descarte de gota gruesa o frotis	3.50	2.00
Atención de Fiebre Amarilla	7.16	4.09
Atención de Leishmaniasis	7.16	4.09
Atención de Dengue	7.16	4.09
Otras Prioridades	7.16	4.09
Supervisiòn de enjuagues bucales en escolares	3.50	2.00
Evaluaciòn de placa bacteriana en escolares	3.50	2.00
Evaluaciòn de placa bacteriana en gestantes	3.50	2.00
Visitas de vigilancia del animal mordedor	4.33	4.33
Jornadas de eliminaciòn de perros vagos	26.00	26.00

Toma de muestras de sal	4.33	4.33
Limpieza y clorificación de Reservorios de agua	4.33	4.33
Inspecciòn sanitaria de eliminación de excretas	13.00	13.00
Inspección de viviendas y Centros Expendios de Alimentos	26.00	26.00
Capacitaciòn a manipuladores de alimentos	6.00	6.00
Capacitaciòn para agentes comunales de salud	6.00	6.00
Capacitación al personal del establecimientos(s)	12.00	12.00
Sesiones de Psicoprofilaxis	6.00	6.00
Prácticas de cepillado dental a los escolares	12.00	12.00
Charlas a padres, profesores y escolares, relacionadas a Programas de Salud	36.00	36.00
Supervisión a Establecimientos	24.00	24.00
Reunión de la Asociación con la Comunidad	24.00	24.00
Reuniones con la Asamblea General de la Asociación CLAS y/o Consejo Directivo	24.00	24.00
Reunión de Gestión Interna	12.00	12.00
Coordinación Extrainstitucional	12.00	12.00
Coordinación Intrainstitucional	12.00	12.00
Referencia de pacientes	6.00	6.00
Triaje	3.50	2.00
Entrevistas Sociales	3.50	2.00
Evaluaciones Nutricionales	3.50	2.00
Administración de Tratamientos Ambulatorio	2.70	2.50
Administración de Tratamientos a pacientes internados y/o observación	2.70	2.50
Recetas entregadas o despachadas	0.14	0.14
Realización de exámenes de laboratorio	2.16	1.08
Realización de exámnes de imágenes	6.68	
Visita Domicialiaria	6.00	6.00
Otros		

Annex E: Algorithm for the Formulation and Ambulatory Services Packages



Annex F: Costing Norms for High-volume HRGs

Condiciones menores de cabeza, cuello, oído			
Opción A. Tratamiento con Penicilina			
	Cantidad	Costo Unitario	Soles
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	7	0,20	1,40
Prescripcion y recomendaciones	4	0,20	0,80
Penicilina Benzatínica	1 ampolla	2,18	2,18
Preparación de receta	1	0,10	2,18
Visita de Control			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Examen dirigido y alta	3	0,20	0,60
Total			**9,47**

Condiciones menores de cabeza, cuello, oído			
Opción B. Tratamiento con Amoxicilina			
	Cantidad	Costo Unitario	Soles
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	7	0,20	1,40
Prescripcion y recomendaciones	4	0,20	0,80
Amoxicilina	2 fcos	3,33	6,66
Preparación de receta	1	0,10	2,18
Visita de Control			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Examen dirigido y alta	3	0,20	0,60
Total			**13,94**

Enf. Intest. Infeccios. adultos < 70, sin complicaciones			
Ascaridiasis			
	Minutos	Costo Unitario	Soles
Visita Inicial			
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	7	0,20	1,40
Ordenes de investigación clínica	3	0,20	0,60
Preparación de terapéutica inicial	3	0,20	0,60
Examenes Auxiliares	Cantidad		
Examen directo de heces	1	1,17	1,17
Examen de heces por concentracion (2 rondas)	6	1,17	7,02
Test de Graham	1	1,17	1,17
Hemograma	1	2,16	2,16
Visita de Control 1			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Preparación de terapéutica final	3	0,20	0,60
Mebendazol fco	1	1,73	1,73
Visita de Control 2			
Triaje - Admisión	5	0,07	0,35
Alta	3	0,20	0,60
Total			**19,70**

Enf. Intest. Infeccios. adultos < 70, sin complicaciones			
Strongyloidiasis			
	Minutos	Costo Unitario	Soles
Visita Inicial			
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	7	0,20	1,40
Ordenes de investigación clínica	3	0,20	0,60
Preparación de terapéutica inicial	3	0,20	0,60
Examenes Auxiliares	Cantidad		
Examen directo de heces	1	1,17	1,17
Examen de heces por concentracion (2 rondas)	6	1,17	7,02
Test de Graham	1	1,17	1,17
Hemograma	1	2,16	2,16
Visita de Control 1			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Preparación de terapéutica final	3	0,20	0,60
Mebendazol fco	6	4,33	26,00
Visita de Control 2			
Triaje - Admisión	5	0,07	0,35
Alta	3	0,20	0,60
Total			**43,97**

Asma			
Crisis leve a moderada			
	Minutos	Costo Unitario	Soles
Visita Inicial			
Triaje - Admisión	1	0,07	0,07
Anamnesis	3	0,20	0,60
Examen fisico preferencial	4	0,20	0,80
Preparación de terapéutica inicial	2	0,20	0,40
Nebulización (incluye oxígeno)	1	10,12	10,12
Reevaluación	5	0,20	1,00
Preparación de terapéutica de control	3	0,20	0,60
Salbutamol INH	1	14,15	14,15
Visita de Control 1			
Triaje - Admisión	5	0,07	0,35
Anamnesis y examen preferencial	8	0,20	1,60
Indicaciones generales y alta	5	0,20	1,00
Total			**30,69**

Asma			
Crisis severa, sin hospitalización			
	Minutos	Costo Unitario	Soles
Visita Inicial			
Triaje - Admisión	1	0,07	0,07
Anamnesis	3	0,20	0,60
Examen fisico preferencial	4	0,20	0,80
Preparación de terapéutica inicial	2	0,20	0,40
Nebulización (incluye oxígeno y fenoterol)	1	10,12	10,12
Cloruro de sodio	1	2,28	2,28
Hidrocortisona EV	1	11,13	11,13
Reevaluación (4)	9	0,20	7,20
Rx Torax	1	6,68	6,68
Preparación de terapéutica de control	3	0,20	0,60
Visita de Control 1			
Triaje - Admisión	5	0,07	0,35
Anamnesis y examen preferencial	8	0,20	1,60
Salbutamol INH	1	14,15	14,15
Indicaciones generales y alta	5	0,20	1,00
Total			**56,97**

Desórdenes Pediátricos del Tracto Resp Superior			
Opción A. Tratamiento con Penicilina			
	Cantidad	Costo Unitario	Soles
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	7	0,20	1,40
Prescripcion y recomendaciones	4	0,20	0,80
Penicilina Benzatínica	1 ampolla	2,18	2,18
Paracetamol	1	1,63	2,18
Preparación de receta	1	0,10	2,18
Visita de Control			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Examen dirigido y alta	3	0,20	0,60
Total			**11,65**

Desórdenes Pediátricos del Tracto Resp Superior			
Opción B. Tratamiento con Cotrimoxazol			
	Cantidad	Costo Unitario	Soles
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	7	0,20	1,40
Prescripcion y recomendaciones	4	0,20	0,80
Cotrimoxazol	1	5,06	5,06
Paracetamol	1	1,63	2,18
Preparación de receta	1	0,10	2,18
Visita de Control			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Examen dirigido y alta	3	0,20	0,60
Total			**14,53**

Sospecha de Tuberculosis			
Manejo del sintomático respiratorio, Dx de TBC			
	Cantidad	Costo Unitario	Soles
Triaje - Admisión	5	0,07	0,35
Anamnesis	5	0,20	1,00
Examen fisico preferencial	8	0,20	1,60
Ordenes de investigación clínica	3	0,20	0,60
Examenes Auxiliares			
PPD (incluye aplicación y lectura)	1	1,63	1,63
Radiografía de Tórax	1	6,68	6,68
BK esputo	3	1,12	3,36
Visita de Control			
Triaje - Admisión	5	0,07	0,35
Anamnesis	3	0,20	0,60
Examen dirigido y alta/inicio Tto	3	0,20	0,60
Total			**16,77**

Annex G: Costing Observed for Identifiable Services Packages in the Local Health Program

Paquete de Servicio	Costo Centro	Costo Puesto
1. Atención recuperativa no priorizada		
Consultas Clínicas	**6,13**	**3,50**
Consultas Dentales	**3,50**	**2,00**
Consultas de Psicología	**3,50**	**2,00**
Atenciones de Tópico	**54,15**	**27,45**
Visitas a pacientes internados	**7,16**	**4,09**
Referencia de pacientes	**6,00**	**6,00**
Triaje	**3,50**	**2,00**
Entrevistas Sociales	**3,50**	**2,00**
Evaluaciones Nutricionales	**3,50**	**2,00**
Administración de Tratamientos a pacientes internados y/o observación	**2,70**	**2,50**
Recetas entregadas o despachadas	**0,14**	**0,14**
Realización de exámenes de laboratorio	**2,16**	**1,08**
Administración de Tratamientos Ambulatorio	**2,70**	**2,50**
Otros	**3,50**	**2,00**
2. Protección individual contra enfermedades infecciosas de alto riesgo epidemiológico		
Vacunación BCG (RN)	**1,15**	**1,06**
Vacunación APO < 1 año	**1,15**	**1,06**
Vacunación DPT < 1 año	**1,15**	**1,06**
Vacunación Antisarampionosa 1 año	**1,15**	**1,06**
Vacunación BCG 1 a 4 años	**1,15**	**1,06**
Vacunación APO 1 a 4 años	**1,15**	**1,06**
Vacunación DPT 1 a 4 años	**1,15**	**1,06**
Vacunación Antisarampionosa 1 a 4 años	**1,15**	**1,06**
Vacunaciones Toxoide Tetánico en MEF	**1,15**	**1,06**
Vacunación Antiamarílica	**1,15**	**1,06**
Vacunación contra Hepatitis en niños	**1,15**	**1,06**
3. Promoción de la salud infantil		
CRED < 1 año	**3,50**	**2,00**
CRED 1 año	**3,50**	**2,00**
CRED 2 a 4 años	**3,50**	**2,00**
4. Prevención y promoción en Salud Reproductiva		
Atenciones de Consejerìa en Salud Reproductiva	**3,50**	**2,00**
Toma de PAP	**3,50**	**2,00**
Examen de Mama	**7,16**	**4,09**
Protegidas x Preservativos	**1,75**	**1,00**

Paquete de Servicio	Costo Centro	Costo Puesto
Protegidas x Tabletas Vaginales	**1,75**	**1,00**
Protegidas x Métodos Parenterales	**1,75**	**1,00**
Protegidas x Métodos Orales	**1,75**	**1,00**
Protegidas x Dispositivo Intrauterino (DIU)	**13,28**	
Protegidas Métodos Definitivos	**7,16**	**4,09**
5. Atención Materno Perinatal sin morbilidad asociada		
Controles Prenatales BRO	**3,50**	**2,00**
Controles Prenatales ARO	**7,16**	**4,09**
Atención de Parto	**144,62**	
Control de Puerperio	**3,50**	**2,00**
Atención y examen del Recién Nacido	**6,13**	**3,50**
Descarte dental en gestantes	**3,50**	**2,00**
Evaluaciòn de placa bacteriana en gestantes	**3,50**	**2,00**
Sesiones de Psicoprofilaxis	**6,00**	**6,00**
6. Promoción de la salud del escolar		
Topicación con Flúor	**1,84**	**1,05**
Descarte dental en escolares	**3,50**	**2,00**
Descarte de enfermedades crónicas en escolares	**6,13**	**3,50**
Prácticas de cepillado dental a los escolares	**12,00**	**12,00**
Supervisiòn de enjuagues bucales en escolares	**3,50**	**2,00**
Evaluaciòn de placa bacteriana en escolares	**3,50**	**2,00**
Charlas a padres, profesores y escolares, relacionadas a Programas de Salud	**36,00**	**36,00**
7. Atenciones recuperativas priorizadas. Menores de 5 años		
Atencion de niños < 5 años con Neumonia (NG y EMG)	**6,13**	**3,50**
Atencion de niños < 5 años con faringo amigdalitis supurada	**6,13**	**3,50**
Atencion de niños < 5 años con otitis media aguda	**6,13**	**3,50**
Atencion de niños < 5 años con diarrea y con deshidratacion	**6,13**	**3,50**
8. Atenciones recuperativas priorizadas. Tuberculosis		
Atenciòn de Tuberculosis	**6,13**	**3,50**
Descarte de Muestras de Esputo	**0,56**	**0,28**
Visita Domicialiaria	**6,00**	**6,00**
Administración de Tratamientos Ambulatorio	**2,70**	**2,50**
Entrega de Alimentos (PANFAR, PANTBC)	**4,33**	**4,33**
9. Intervenciones preventivo promocionales de salud pública		
Visitas de vigilancia del animal mordedor	**4,33**	**4,33**
Jornadas de eliminaciòn de perros vagos	**26,00**	**26,00**
Vacunación de Perros	**1,15**	**1,06**
Toma de muestras de sal	**4,33**	**4,33**
Limpieza y clorificación de Reservorios de agua	**4,33**	**4,33**
Inspecciòn sanitaria de eliminación de excretas	**13,00**	**13,00**
Inspección de viviendas y Centros Expendios de Alimentos	**26,00**	**26,00**
Capacitaciòn a manipuladores de alimentos	**6,00**	**6,00**
Capacitaciòn para agentes comunales de salud	**6,00**	**6,00**
10. Reforzamiento de la administración compartida - cogestión		
Capacitación al personal del establecimientos(s)	**12,00**	**12,00**
Supervisión a Establecimientos	**24,00**	**24,00**
Reunión de la Asociación con la Comunidad	**24,00**	**24,00**
Reuniones con la Asamblea General de la Asociación CLAS y/o Consejo Directivo	**24,00**	**24,00**

Paquete de Servicio	**Costo Centro**	**Costo Puesto**
Reunión de Gestión Interna	**12,00**	**12,00**
Coordinación Extrainstitucional	**12,00**	**12,00**
Coordinación Intrainstitucional	**12,00**	**12,00**

Annex H: Costing Observed for High-volume HRGs

Codigo	Descripcion	Atenciones	Atendidos	Costo U consulta	Costo consulta	Costo Tot Ex	Costo Tot Med	Costo Total Anual	Costo Atencion	Costo Atendido	Costo per capita
C17	Dx de Boca, Cabeza, Cuello/Oído - Categoría 2 < 70, sin complicaciones	263	240	4,57	1.201,91	338,83	1.047,44	20.705,48	9,84	10,78	0,06
F49	Desordenes Intestinales Infecciosos < 70, sin complicaciones	823	309	4,57	3.761,11	2.155,88	17.883,25	190.401,94	28,92	77,02	0,54
P01	Asma/Sibilancia Recurrente	484	406	4,57	2.211,88	1.766,06	3.010,60	55.908,31	14,44	17,21	0,16
P03	Desorden del Tracto Respiratorio Superior	3433	3277	4,57	15.688,81	2.135,91	15.934,96	270.077,43	9,83	10,30	0,77
P04a	Sospecha de Tuberculosis	94	8	4,57	429,58	493,25	81,34	8.033,33	10,68	125,52	0,02
P04b	Otras patologías del Tracto Resp Inferior	1015	924	4,57	4.638,55	1.002,29	6.098,29	93.913,07	11,57	12,70	0,27
P06a	Infecciones Menores	458	384	4,57	2.093,06	633,32	1.870,68	36.776,45	10,04	11,97	0,11
P06b	Infecciones intestinales	503	381	4,57	2.298,71	418,12	1.384,79	32.812,96	8,15	10,77	0,09
P06c	Infecciones del Tracto Urinario	153	55	4,57	699,21	352,30	247,18	10.389,50	8,49	23,61	0,03
P15	Injuria accidental	257	213	4,57	1.174,49	1.836,19	1.042,71	32.427,09	15,77	19,03	0,09
P23	Desórdenes hematológicos	232	68	4,57	1.060,24	795,20	455,11	18.484,36	9,96	33,98	0,05
S13	Fiebre de origen desconocido	188	182	4,57	859,16	213,29	1.641,40	21.710,81	14,44	14,91	0,06
S15	Otras infecciones no virales	269	216	4,57	1.229,33	271,68	1.204,40	21.643,26	10,06	12,53	0,06